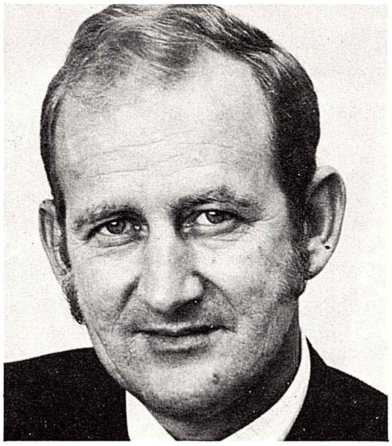
# EPIGLASS BOAT OWNERS MANUAL

EPIGLASS



"We have great pleasure presenting to you this first edition of the Epiglass Boat Owners Manual.

It represents the most comprehensive guide yet published on the protection and maintenance of all marine craft. We feel it should be of greatest interest to all boat lovers, from dinghy owners to power boat enthusiasts to ocean racers.

In the manual you will find most of the problems you are likely to face when it comes to gluing, filling, preserving, sealing, sheathing, painting and more.

We hope this manual will serve as a useful "Ready Reference" to all who share our own marine interests. If we can be of further assistance, our specialised Service Laboratory is available at all times to you, to investigate any individual problems.

To all enthusiasts of the sea and the boats that sail it, we commend this manual to you".

**T. C. Geldard**
General Manager
Consolidated Chemicals Ltd.

# INDEX

1st EDITION

## COLOUR CARD

Page

Marinecoat, Reaction Lacquer, Antifoulings and Engine Enamel ........ Centre Spread

## GLUES

Introduction ........ 2
Types and Applications ........ 2
Epiglass Epiglue Epoxy Resin ........ 3
Epiglass 521 Resorcinol Resin ........ 4
Epiglass Epigrip Resorcinol Modified Epoxy Resin ........ 5
Epiglass U.F. Vinylated Urea Formaldehyde 5

## FILLING

Types and Applications ........ 6
Epifill ........ 6
Flashfix ........ 7
DAP Wood Dough ........ 7
Plastic Steel ........ 7
DAP Liquid Solder ........ 7
Epiglass Fibreglass Repair Kit ........ 8
Epiglass Ding Kit ........ 8
Epiglass Marinecoat Surfacing Compound 8

## SEALING

Sealants for Joints or Under Deck and Skin Fittings ........ 8
Mast and Spar Fittings ........ 8
Bedding of Steel Keels ........ 9
Bedding of Lead Keels ........ 9

## PRESERVING

Everdure Timber Preservative and Sealer Concentrate ........ 9

## SHEATHING

Quantity Estimating Graph ........ 10
Types and Applications ........ 11
Comparative Properties (Fibreglass/Dynel.) 11
Sheathing Stages ........ 11
Choosing the Resin System
    Epiglass 90 Rapid ........ 12
    Epiglass 90 ........ 12
    Epiglass 65 ........ 12
Preparation/Application ........ 12

## PAINTING AND PRESERVING YOUR BOAT

Marine Paint Ready Reckoner ........ 10
New Wooden Hulls (Above and Below Waterline) ........ 14
New Wooden Hulls (To be Dynel or Fibreglass Sheathed) ........ 15
New Wooden Hulls (Interior) ........ 15
Old Painted Wooden Hulls (Above and Below Waterline) ........ 15
Old Painted Wooden Hulls (Interior) ........ 15
Decks (New Unpainted) ........ 15
Decks (Old Painted) ........ 17
Bright Work and Varnish Work
    New Work ........ 17
    Old Varnish In Good Condition ........ 18
    Old Varnish In Poor Condition ........ 18
Canvas Canoes ........ 18
Steel Hulls ........ 18
Steel Decks ........ 19
Steel Superstructures ........ 19
Interior Steel Areas ........ 20
Steel Keels, Rudders etc. ........ 20
Aluminium Hulls and Dinghies ........ 20
Fibreglass Hulls (Above the Waterline) ........ 20
Fibreglass Hulls (Below the Waterline) ........ 21
Plywood Water and Fuel Tanks ........ 21
Steel Tanks ........ 22
High Speed Craft ........ 22
New Concrete (Ferro-Cement) Hulls ........ 22
Old Concrete (Ferro-Cement) Hulls ........ 23

## PRIMING

Types and Applications ........ 24
Epiglass Marinecoat Tung Oil Red Lead Preservative Primer ........ 24
Epiglass Marinecoat White Timber Preservative ........ 24
Epiglass Reaction Lacquer Primer ........ 33
Epiglass Marinecoat Underwater Primer Undercoat ........ 24
Epiglass Etch Primer ........ 25
Epiglass Marinecoat Zinc Chromate Primer .. 25
Epiglass Epi-Prime ........ 25
Epiglass Neoseal ........ 25
Epiglass Epitar ........ 26
Epiglass Epoxy Zinc Chromate Primer ........ 26
Epiglass 2-Pot Epoxy Undercoat ........ 26

## UNDERCOATING

Marinecoat Undercoat Surfacer ........ 26
Epiglass Epitar White Sealer Coat ........ 26

## MARINECOAT FINISHES

Epiglass Marinecoat Plastic Gloss Finish ........ 27
Marinecoat Non-Skid Deck Finish ........ 27
Colour Card ........ Centre Spread

## MARINE VARNISHES AND ALLIED PRODUCTS

Epivar Marine Spar Varnish ........ 28
Epiglass Marinecoat Polyurethane Spar Varnish ........ 28
Epiglass Sunscreen ........ 29
Epiglass Stain Additive ........ 29
Epiglass Polyvar ........ 29
Epiglass Timbertone Grain Filler/Sealer/Toner ........ 29
Epiglass PBS Self Sealing Plastic Finish ........ 29
Indothane ........ 29

## ANTIFOULINGS

Types and Applications ........ 30
Epiglass Underwater Primer Undercoat ........ 31
Epiglass Heavy Duty Vinyl Antifouling ........ 31
Epiglass Light Duty Vinyl Pastel ........ 31
Epiglass Pacific Antifouling ........ 31
Epiglass Antifouling Boot Topping ........ 31
Epiglass Hi-Speed Copper Antifouling ........ 32
Colour Card ........ Centre Spread

## EPIGLASS REACTION LACQUER SYSTEM

Introduction ........ 33
Epiglass Reaction Lacquer Primer ........ 33
Epiglass Reaction Lacquer Undercoat ........ 33
Epiglass Polyurethane Reaction Lacquer Finish ........ 33
Colour Card ........ Centre Spread

## GENERAL

Epiglass Safe Deck ........ 34
Epiglass PolyColour (Spray Enamel) ........ 34
Epiglass Trailer Coat ........ 34
Epiglass Marinecoat Engine Enamel ........ 34
Epiglass Penetrating Oil ........ 34
Seaclean (General Purpose Cleaner) ........ 34
Epiglass Hand Cleaner ........ 34
Epiglass Rust Killer ........ 34
Rust Bind Oil ........ 34
Epiglass Ready-To-Use Engine Cleaner ........ 35
Epiglass Waterproofing Silicone ........ 35
Degreasing Metal ........ 35
Thinning Paint and Varnish ........ 35
Removing Paint and Varnish ........ 35
Epiglass Showboat Marine Polish ........ 35
Thinners ........ 35
Epiglass Plastic Rope Whip (Simplifies whipping and splicing) ........ 35
Spraying Technique ........ 36
Common Paint Faults (Causes and Prevention) ........ 36

We acknowledge the assistance of Boating World and Seaspray Magazines in supplying a selection of the photographic material used in this Boat Owners Manual.

# Glues

## Introduction

It is important that the following instructions are read and understood before choosing your glue or commencing your gluing work. In all cases recommended proportions must be strictly adhered to, and mixing must be very thorough. Any variation from recommended proportions to allow for the weather will not alter the pot life and will result in weak joints. When measuring small quantities of Epiglue and Epigrip which are a 2 to 1 mix i.e. 2 parts resin to 1 part hardener, it should be noted that it is easier to see that three separate quantities are equal than to judge that one is twice as large as the other. Mixing is best done with a putty knife or spatula on a flat board. Having spread the material out over a fairly large area during mixing, it should be scraped together again into a heap at least twice, so as to ensure that no areas of either Resin or Hardener are left unmixed. Upon the completion of mixing, as with all Epoxy materials, it is wise to spread the material out again so that the heat of reaction is lost to the air by radiation and the pot life is extended as far as possible.

Surfaces to be glued must be clean, dry and free from paint or other contaminant. Cramping should be sufficiently tight to bring the joint into reasonably close contact and to cause exudation of the glue from the edges. Excessively high cramping pressures will cause a "starved" and, in consequence, weak joint. Coverage for all glues is approximately 25-30 sq.ft. per pint of mixed material.

Oily timbers such as Teak should be degreased with Trichlorethylene or Methylene Chloride immediately before gluing. Resinous timbers such as Oregon (Douglas Fir) should be treated with 2% Caustic Soda solution, rinsed thoroughly and allowed to dry. This ensures that the glue can make contact with the timber fibres and not merely with the resin particles between them. Best results with heart timbers are obtained if the surfaces to be joined are sanded or scored beforehand. Before gluing any treated timbers make sure that there are no residual salts on the surface. When building a boat, the only safe form of surface applied wood preservative is EPIGLASS EVERDURE. Creosote and Metal Naphthenates are greasy by nature and reduce the adhesion of Glues, Fillers and Resins.

All EPIGLASS Synthetic Resin Glues except PVA, Household Glue and Contact Cement comply with B.S.S. 1204/1965 and N.Z.S.S. 1155/1966. In these specifications the highest rating is W.B.P. (Weather and Boil Proof). This implies maximum exterior durability and resistance to continuous immersion. The description M.R. implies Mould and Moisture Resistance, but glues in this category are not recommended for prolonged exposure to wet conditions. The joints tend to deteriorate after a period of years. Three further categories, G.F. (Gap Filling), C.C. (Close Contact )and INT. (Interior) are self explanatory.

## Just any marine glue wont do... Epiglass has a marine glue formulated to the exact requirements of your boat - sail or power.

| Type | **Epiglue**<br>2 Pot Epoxy Resin | **521**<br>2 Pack Resorcinol Formaldehyde | **Epigrip**<br>Resorcinol Modified 2 Pot Epoxy | **U.F.**<br>2 Pack Vinylated Urea Formeldehyde |
|---|---|---|---|---|
| Complies with British Standard Specification 1204/1965 | Weather and Boil Proof<br>Gap Filling<br>Close Contact | Weather and Boil Proof<br>Gap Filling<br>Close Contact | Weather and Boil Proof<br>Gap Filling<br>Close Contact | Mould and Moisture Resistance<br>(Interior)<br>G.F. ⎫ Separate<br>C.C. ⎭ Hardeners |
| Indications for use | The premium glue for all marine gluing especially for Timber, Metal, Concrete joints which will be subjected to heavy strain under adverse conditions | An excellent general purpose marine glue for timber joints which are required to withstand tough out-door weathering conditions | A low cost interior or exterior glue suitable for wood to wood application only | Timber joints to withstand damp conditions.<br>Eminently suitable for the construction of small plywood craft |
| Prohibition for use | Not on Boric treated Timber | None | Not on Boric treated Timber | Not suitable for permanently wet locations especially where heavy strains occur |
| Mixing Proportions | 2 Resin<br>1 Hardener<br>(by volume)<br>9 Resin<br>4 Hardener<br>(by weight) | 2 Resin<br>1 Hardener<br>(by volume)<br>5 Resin<br>1 Hardener<br>(by weight) | 2 Resin<br>1 Hardener<br>(by volume) | 1 Resin<br>1 Hardener<br>(by volume)<br>5 Resin<br>2 Hardener<br>(by weight) |
| Pot life of half pint mix at 70°F–20°C) | 20 minutes | 5 hours | 15 minutes | 1–1½ hours |
| Accelerator available | N/A | Yes | N/A | Yes |
| Open time | Not necessary but joints can be left open if desired. Closing must take place before gelling commences (up to 30 minutes at 70°F–20°C) | Not less than 5 minutes nor more than 20 minutes at 70°F–20°C) | Not less than 5 minutes nor more than 20 minutes at 70°F–20°C) | G.F. As long as convenient but before gelling commences.<br>C.C. as long as convenient but before Syrup film dries |
| Colour of glue line | Colourless | Dark Brown | Brown | G.F. Light Brown<br>C.C. Colourless |
| Clean Up | Epiglass Cleaning Fluid | Water | Epiglass Cleaning Fluid | Water |

# Epiglass Epiglue Epoxy Resin Glue

DESCRIPTION:

It is particularly suited for wooden ship construction on areas to be exposed to, or continuously immersed in salt or fresh water, and will carry heavy stresses even when the timber is saturated with moisture for long periods. EPIGLUE has a colourless glue line.

For mast and spar construction, including the fitting of mast tracks, the securing of wooden members into concrete hulls, and for gluing reinforced fibreglass panels etc. use EPIGLUE.

The resilient nature of a cured EPIGLUE joint, combined with its fantastic adhesion, make this glue the best material for use in highly stressed joints.

EPIGLASS EPIGLUE is a two component Epoxide Resin Adhesive which complies with B.S.S. 1204/1965 W.B.P., G.F. and C.C. (See Introduction).

Although EPIGLUE is the pre-eminent glue for untreated or Tanalised timber it should not be used after Boric treatment.

**DO NOT USE EPIGLUE BELOW 45°F (7°C)**

In addition to its use with timber, EPIGLUE can be employed for the gluing of metals, stone, concrete, fibrolite, leather, glass, porcelain and most plastics.

DIRECTIONS:

Mix 2 parts by volume of EPIGLUE with 1 part by volume of Hardener and apply to both faces. Cramp overnight. An "open time" is not necessary but see chart opposite. The pot life at 60°F (15°C) for a ½ pint mix is approximately 30 minutes, but if spread out in a shallow layer in a tray this can be increased to at least 1 hour.

MISCELLANEOUS DATA:

Linear Shrinkage on curing 0.6% maximum.

Moisture Vapour Permeability 0.48 x $10^{-6}$ grs/hr/sq.cm.

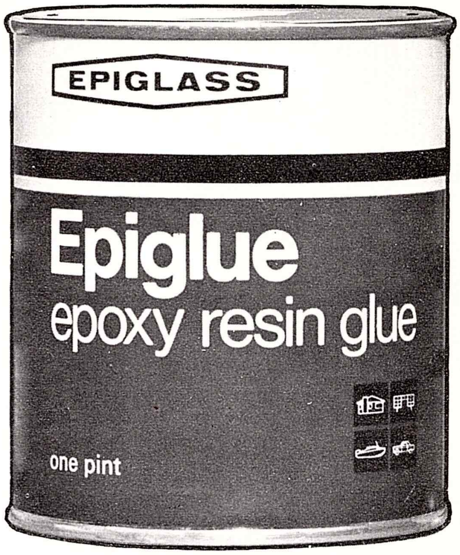
Moisture absorption after prolonged immersion 0.75% maximum.

Coefficient of linear expansion 5.1 x $10^{-5}$ inches/inch°F up to 130°C.

Heat distortion temperature of cured film 160°F (70°C) and at 250°F (120°C) the Shear Strength of the joint will have fallen to 600lbs/sq.in. (p.s.i.)

MIXING PROPORTIONS:

By volume
2 parts EPIGLUE
1 part Hardener
By weight
2.25 parts EPIGLUE
(equivalent to 9oz. EPIGLUE)
1 part Hardener
(equivalent to 4oz. Hardener)

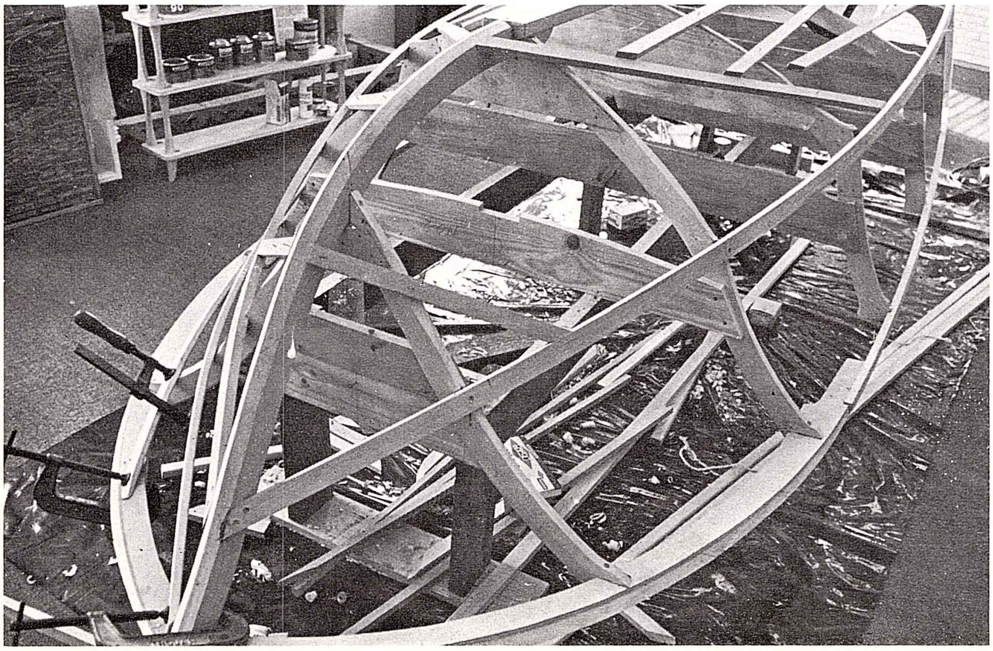


EPIGLUE EPOXY RESIN GLUE and its Hardener have an indefinitely long shelf life if stored in closed containers and under moderately cool conditions.

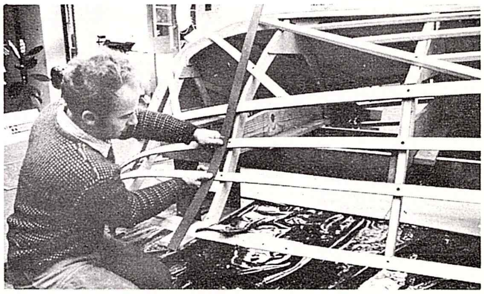
EPIGLASS CLEANING FLUID should be used for cleaning pots and brushes before the material has begun to gel.

SPECIFICATION:

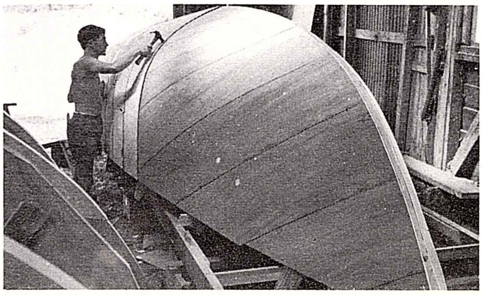
| | *Mixed Pot Life ¾ pint* | *Maximum Open times (approx)* | *Time to reach Full Cure* | *Wood to Wood Max. Shear Strength (p.s.i.) Determined @ 70°F* | *Minimum Cramping Time* |
|---|---|---|---|---|---|
| *50°F (10°C)* | *20-30 mins.* | *30 mins.* | *8-10 days* | *2000* | *30 hours* |
| *70°F (20°C)* | *10-20 mins.* | *20 mins.* | *4-6 days* | *3000* | *16 hours* |
| *100°F (40°C)* | *N/A* | *10 mins.* | *1-2 days* | *3000* | *6 hours* |
| *200°F (95°C)* | *N/A* | *3-5 mins.* | *30-45 mins.* | *3000* | *30 minutes* |
| *250°F (120°C)* | *N/A* | *N/A* | *20-30 mins.* | *3000* | *15 minutes* |
| *300°F (150°C)* | *N/A* | *N/A* | *10-20 mins.* | *3000* | *5 minutes* |



*A Hartley Sprite being framed up using Epiglass 521 Resorcinol Glue.*



*A Hartley Sprite being faired off in readiness for plywood.*



*A keel boat under construction – showing two-skin diagonal construction.*

# Epiglass 521 Resorcinol Resin Marine Glue

DESCRIPTION:

EPIGLASS 521 RESORCINOL GLUE is an excellent general purpose marine glue for timber joints which are required to withstand tough outdoor weathering conditions. It complies with British Standard Specification 1204/1965 Weather and Boil Proof, Gap Filling and Close Contact.

DIRECTIONS:

Mixing proportions:
By weight
5 parts 521 Glue
1 part Hardener
By volume
2 parts 521 Glue
1 part Hardener

**Note:** Mixing proportions must be accurate. Insufficient Hardener will not only lead to weak joints but also to subsequent "bleeding" through paint films. Excess uncured resin is soluble in mineral turpentine and in paint binders and undercured glue will lead to the development of unsightly brown stains. These will never occur if correct Glue and Hardener ratios are maintained.

After thoroughly mixing the Glue and Hardener, apply to both surfaces to be joined and **allow the joint to remain open for five minutes before cramping.** When using a hot process it is only necessary to apply the mixture to one surface. EPIGLASS 521 leaves a dark line as do all Resorcinol glues.

ACCELERATOR

A special Accelerator is available for use with EPIGLASS 521 Glue. It should be added to the Glue and Hardener mixture at the rate of no more than 4% (equivalent to ½ fl. oz. to ½ pint of syrup) and will materially shorten the curing time. At the maximum 4% addition recommended above, the cure time is reduced to approximately one quarter. Addition of excessive quantities of Accelerator will weaken the joint without further shortening curing time.

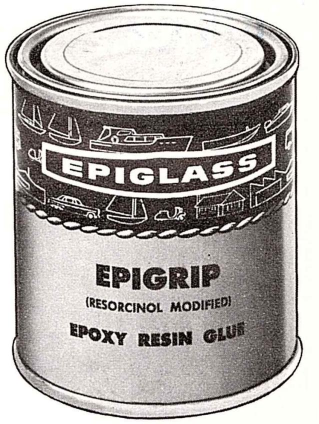
EPIGLASS 521 Glue should be stored in closed containers under cool conditions and has a storage life of approximately 12 months. The bag of Hardener must be closed tightly when not in use or deterioration will rapidly occur. It may be used for all normally treated or untreated timbers and is suitable for boric treated timber where epoxy glues will fail. Warm soapy water may be used for cleaning pots and brushes before the glue has commenced to gel.

The tensile strength of a cured joint is of the order of 1500 p.s.i. (lbs/sq.in). This is achieved after 1-2 days at ambient temperatures.

| SPECIFICATION:<br>*Temperature* | *Pot Life* | *Cure Time* | *Cramping Time* |
|---|---|---|---|
| *20°C (70°F)* | *5 hours* | *9 hours* | *8 hours* |
| *25°C (80°F)* | *3 hours* | *5 hours* | *4½ hours* |
| *30°C (90°F)* | *1¾ hours* | *3 hours* | *2½ hours* |

*John Lidgard's RUNAWAY glued with Epiglass 521 Resorcinol*

## Epiglass Epigrip Resorcinol Modified Epoxy Resin Glue



DESCRIPTION:

EPIGLASS EPIGRIP RESORCINOL MODIFIED EPOXY RESIN GLUE, as the description implies, incorporates the properties of both types of resin. Timber joints made with this product easily comply with B.S.S. 1204/1965 W.B.P., G.F. and C.C. (See Introduction).

EPIGLASS EPIGRIP yields excellent results in timber construction work such as boat building, timber lamination, furniture construction, and, indeed, in all joinery.

The glue line is much less dark than when the normal Resorcinol Formaldehyde Glues are used. Results are uniformly excellent with untreated timber or Tanalised Timber, but EPIGLASS EPIGRIP should not be used after Boric Treatment.

The thixotropic (non-sagging) consistency of EPIGLASS EPIGRIP, combined with its low cure shrinkage, long pot life and easy spreading properties (whether by roller, squeegee or brush) make it an ideal product for both gap filling and close contact joints.

DIRECTIONS:

Two parts by volume of EPIGLASS EPIGRIP should be mixed with 1 part by volume of EPIGLASS EPIGRIP Hardener. Mixing is best done with a putty knife or spatula on a flat board. Mix only sufficient for 20 to 30 minutes work. Apply evenly to both faces and allow 5 to 10 minutes open time before it is cramped. The cramping should be sufficient to bring the timber surfaces together and to cause slight exudation, but care must be taken that the joint is not starved by excessively high pressures. If this is done much of the strength of the glue will be lost.

**DO NOT USE BELOW 45°F (7°C)**

EPIGLASS EPIGRIP and its hardener should be stored in closed containers under cool conditions. Storage life is approximately 12 months.

EPIGLASS CLEANING FLUID should be used for cleaning pots and brushes before the material has begun to gel.

## Epiglass U.F. Vinylated Urea Formaldehyde Glue

DESCRIPTION:

EPIGLASS U.F. GLUE is a moisture resistant resin which is eminently suitable for the construction of small plywood craft, for all interior marine joinery, caravans, the bonding of laminated plastics, construction of furniture and for general wood working.

EPIGLASS U.F. GLUE yields wood to wood joints conforming to B.S.S. 1204/1965 types Mould and Moisture Resistance and Interior.

EPIGLASS U.F. GLUE is available with Gap Filling Powder Hardener or with Liquid Close Contact Hardener.

DIRECTIONS:

When using Gap Filling Hardener the mixing proportions are:
1:1 by volume or 2:5 by weight.
Always add Hardener to the Glue and never in the reverse order.

Stir very thoroughly before use and apply to one or preferably both faces of the joint. G.F. Hardener may be used for Close Contact joints if desired.

When using Close Contact Hardener, apply the Glue syrup to one face and the Hardener to the other and cramp or nail immediately.

EPIGLASS U.F. GLUE leaves a colourless glue line.

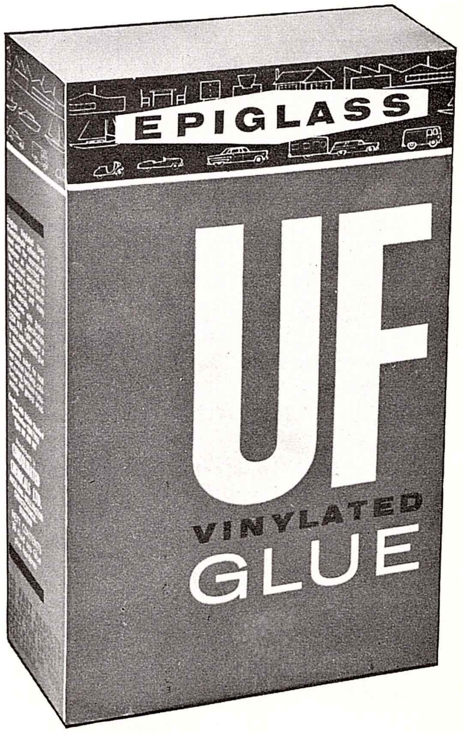
For laminated beams and other joints which are subject to heavy strains, these cramping times should be doubled. The joint must be assembled within ⅔ of the pot life time. If the applied glue layer has gelled before pressure has been applied, the joint will fail. Pressure must remain constant during the whole of the cramping time. When using Liquid Close Contact Hardener, cramping should be maintained for 30-40 minutes at 70°F (20°C).

ACCELERATOR

A special Accelerator is available for use with EPIGLASS U.F. GLUE. It should be added to the Glue/Hardener mixture at the rate of no more than 2% (equivalent to ½ a fl. oz. to 1 pint of glue). At this rate of addition the curing time is halved. Excessive addition of Accelerator will not only weaken the joint but also lengthen the curing time.

EPIGLASS U.F. GLUE should be stored in closed containers under cool conditions, and has a storage life of approximately 12 months. It may be used for all normally treated or untreated timbers (including Boric). Warm soapy water may be used for cleaning pots and brushes before the glue has commenced to gel.

The tensile strength of a cured joint at 70°F is of the order of 1200 p.s.i. This is achieved in 1 to 2 days at ambient temperature with Powder (G.F.) Hardener and in about 60-70 minutes with Liquid (C.C.) Hardener.



MIXED POT LIFE & MINIMUM CRAMPING TIMES (Powder Hardener)

| *Temperature* | | *Pot Life* | *Cramping Time* |
|---|---|---|---|
| *50°F* | *10°C* | *5½-6 hrs* | *20 hours* |
| *60°F* | *15°C* | *2-2½ hrs* | *8 hours* |
| *70°F* | *20°C* | *1-1½ hrs* | *3½ hours* |
| *80°F* | *25°C* | *30-45 mins* | *2 hours* |

# Filling

In boat construction and repair there is always a great demand for suitable fillers. Consolidated Chemicals Ltd offer many types of Epiglass synthetic resin fillers. Here is your basic guide on "what to use where". Specific details are given later in this section.

| | |
|---|---|
| Wood (Below Waterline) | EPIFILL<br>FLASH-FIX |
| Wood (Above Waterline) | EPIFILL<br>FLASH-FIX<br>DAP WOOD DOUGH (interior only) |
| Metal (Steel, Aluminium, etc.) | PLASTIC STEEL<br>EPIFILL<br>FLASH-FIX<br>DAP LIQUID SOLDER (Domestic only) |
| Concrete | EPIFILL |
| Fibreglass | EPIFILL<br>FLASH-FIX<br>DING KIT |
| Painted Surfaces | MARINECOAT SURFACING COMPOUND |

# Epifill

Epifill is the premier resin filler, and is based on Epoxy resin. It is available in three colours, Kauri, Mahogany and White.

The adhesion of EPIFILL is excellent to all clean surfaces including wood, metal, concrete, glass and most plastics. It is essential that the surface should be clean and free of grease, particularly on smooth non-absorbent surfaces such as metal and glass where even a fingerprint can cause bad adhesion. Oily timbers such as Teak should be surface degreased with Carbon Tetrachloride or Methylene Chloride before the holes are filled, if the adhesion is at all critical. Dense hard timbers should be roughened with sandpaper or scored to give a good mechanical key. Excessively resinous timbers such as Oregon should be treated with Caustic Soda in the same way as recommended for EPIGLUE earlier in this manual. This ensures that EPIFILL can make contact with the timber and not merely with natural resin between the fibres.

The cure shrinkage of EPIFILL is extremely low. This, with its excellent adhesion means that, in boat building, holes cut for bolt heads, etc. can be filled in one operation even if they are as big as a match box.

EPIFILL will not shrink and will not fall out. Its working properties are so good that it can be used for filling even such small imperfections as rough grain. EPIFILL is the ideal product for fairing the curves on steel or concrete boat hulls. For this application a suitably flexible Doctor Blade should be employed.

Even if totally immersed for long periods, fully cured EPIFILL shows no sign of softening or swelling.

Under certain conditions of service, and especially when kiln dried timber has been used, the filled areas may become slightly raised.

This is not due to swelling of the EPIFILL but rather to swelling of the timber resulting in a decrease in the diameter of the nail holes, etc. This forces EPIFILL above the surface but does not result in any loss of adhesion or further deterioration.

Careful sanding when the boat comes up for painting, followed by redecoration, will remedy the matter.

The reverse effect, apparent shrinkage of the fillings, can appear, when EPIFILL is applied to wet timber which subsequently dries out. If any filler other than EPIFILL is used, the forces exerted by the timber can cause loss of adhesion and subsequent falling out.

On concrete, metal or any other material which is unchanged by variations in water content, these effects do not occur.

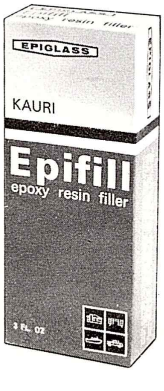
EPIFILL is the best material for filling screwheads, joints, and any other imperfections in laminated or planked hulls before fibreglassing with EPIGLASS 90 RESIN or 90 RAPID RESIN. In repair work, EPIFILL may be safely used for making good small areas where dry rot has been cut out. The last of the lurking mould spores should be killed and the surface hardened and densified by applications of EPIGLASS EVERDURE before filling.

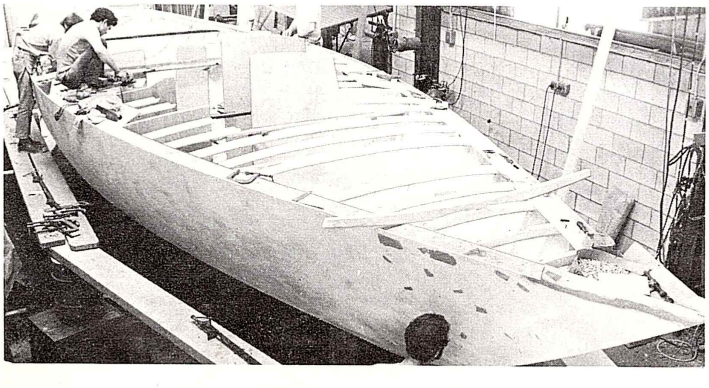
When an old hull is to be fibreglassed, it is essential that all the original paint and putty should be removed down to bare, sound timber before making good with EPIFILL. Unless this is done, the adhesion of the EPIFILL and, indeed that of the fibreglass skin itself, will be no better than that of the old perished paint and putty.

APPLICATION:

As with all two-pot materials the mixed pot life is limited, and no more than can be used in 30-45 minutes at 60°F (15°C) should be mixed at one time. Higher temperature will shorten the working time. NEVER use EPIFILL (or for that matter, any epoxy based materials) at temperatures below 45°F (7°C). Under winter conditions, every effort should be made to raise the temperature to at least 60°F (15°C) by artificial heat. If this can be done, even for 3 or 4 hours immediately after application, a subsequent drop during the night is not so serious, but an early chill invariably leads to an unsatisfactory cure.

At 70°F (20°C), 90% of full hardness is reached overnight and, at this point, it is very good policy to trim off excess filler with a Surform Plane or similar tool. Finish the sanding, using open grit paper for preference, a couple of days later if you wish. Full cure at this temperature takes 4-5 days, but at 60°F (15°C) is extended to at least 7-8 days. If sanding is delayed until full cure has taken place the EPIFILL will have become harder than the timber. Unless care is taken, the timber is sanded away leaving the EPIFILL itself still "proud".





*WAI-ANIWA under construction at Steel Yacht & Launches Auckland. Epifill Epoxy Resin Filler was used for all fairing and filling work.*

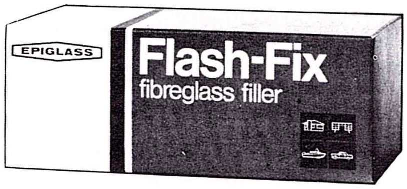
# Flash-Fix

For many years the caption "Fix it in a Flash with Flash-Fix" has been so well known that it almost seems superfluous to extol the virtues of this product.
EPIGLASS FLASH-FIX is based on a special Polyester Resin plus pigments, rust inhibitors, and a mineral filler which is mined in America especially for use in this product.

Unlike other Polyester Fillers, FLASH-FIX has excellent adhesion to metal and prevents subsequent rusting even under wet conditions. FLASH-FIX is ideal for all car body repairs.

FLASH-FIX must be mixed with its Catalyst before use. To 1 tablespoon of FLASH-FIX add 10 drops of liquid Catalyst from the plastic squeeze bottle and mix thoroughly.

Very thorough mixing is essential and, once mixed, the pot life is only 7-10 minutes. This may be extended **slightly** by using a **little** less Catalyst but insufficient Catalyst will give a soft and sticky product. On the other hand, excess Catalyst, though it shortens the setting time, prolongs the gel stage and means that sanding is more difficult. If the correct proportions are used, sanding can be carried out in 30-40 minutes at 70°F (20°C) or in an hour in the winter. As soon as the FLASH-FIX has solidified, and before hardening is complete a preliminary trimming with a Surform Plane or similar tool should be carried out. Final sanding should be completed as early in the setting period as possible. If it is delayed for 48 hours or so, the FLASH-FIX becomes so hard that the labour is very much greater and, on relatively soft materials such as wood, the surrounding area is sanded away in preference to the FLASH-FIX.



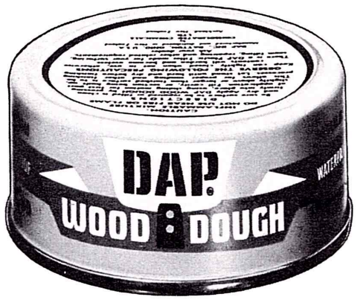
FLASH-FIX is a good material for repair of boat hulls but careful sanding to remove all old paint or rust before application is essential. It is also excellent as a filler in Polyester Boat Hulls. For small emergency repair work it is only necessary to beach the boat for half an hour during which time FLASH-FIX can be knifed into the hole and will have hardened sufficiently for re-launching.

The close chemical relationship between Polyester Resins and EPIGLASS TWO-POT POLYURETHANE REACTION LACQUER makes FLASH-FIX the indicated material for use with this product. A chemical bond takes place between the two products and a completely homogenous system results. When using Reaction Lacquer, FLASH-FIX should always be used for filling inequalities after the Primer or Undercoat stage. For general Marine filling purposes however its adhesion to most materials is marginally lower than is that of EPIFILL. This does not mean that it should not be used, and in fact, in view of its speed of setting, there are many occasions when it is definitely the right answer, but it has its limitations. Among these is one that is shared by all the so-called Fibreglass Fillers – it has a slight tendency to shrink and so cannot be applied in such large volumes as EPIFILL. Providing the filling is left slightly "proud", FLASH-FIX will give excellent results when used for filling screw heads and other imperfections in boat building.
It is particularly suitable for use in Fitting-out and repair work, owing to its rapid hardening properties.

# DAP Wood Dough

Interior cabin fittings which are to be varnished, often call for a self-colour filler but the quantities used and the holes to be filled are usually so small that it is not absolutely necessary to use a product such as EPIFILL. In these cases of shallow indentations and nail holes, etc. use should be made of DAP WOOD DOUGH. This product might be described as plastic wood with a difference! Easily applied, does not roll under the knife, adheres well to all timber, simple to sand and feather off to a perfect edge!
DAP WOOD DOUGH is made under licence for DAP Inc., Dayton, Ohio.

DAP WOOD DOUGH comes in five shades – Pine, Tawa, Matai, Mahogany and Rimu – and is the perfect answer for filling rough grain, nail holes, joints, etc. of interior woodwork that is to be finished in EPIGLASS EPIVAR, MARINECOAT SPAR VARNISH, INDOTHANE (Gloss and Satin) or TIMBERTONE Clear.
DAP WOOD DOUGH must not be used on exterior surfaces. The upsidedown pack guards against drying out!



# Plastic Steel

Plastic Steel is Epoxy Resin based and contains powdered iron and oxides of iron instead of the normal mineral fillers. This blend confers greater crushing strength and makes EPIGLASS PLASTIC STEEL the perfect material for filling holes in castings, repairing leaks in pipes or tanks, renewing worn threads and building up worn or damaged areas on Engine Mountings, etc.

Careful cleaning of the metal before using EPIGLASS PLASTIC STEEL is essential and use should be made of EPIGLASS ENGINE CLEANER and EPIGLASS RUST KILLER.

EPIGLASS PLASTIC STEEL is mixed at two to one by volume with its Hardener and the same general instructions as for EPIFILL apply.

What is termed "Post cure hardening" is most important with EPIGLASS PLASTIC STEEL since maximum mechanical strength and high softening temperatures are required. The technique is a simple one and consists of holding the joint or repair at room temperature for 12-24 hours and then warming it to, say, 150°F (65°C) for 8 hours or 200°F (95°C) for 4 hours.

# DAP Liquid Solder

In your emergency repair locker you should certainly carry a tube of DAP LIQUID SOLDER, which is another speciality product made under licence for DAP Inc., of Dayton, Ohio. DAP LIQUID SOLDER will repair leaks in pots and pans without heat. Just pierce the nozzle of the handy sized tube and apply DAP LIQUID SOLDER in a neat bead. Allow to harden in a warm place for a few hours and you have a permanent repair. The metal should be clean and dry.

## Epiglass Fibreglass Repair Kit

Another "must" is the EPIGLASS FIBREGLASS REPAIR KIT which consists of a small pack of FLASH-FIX plus EPIGLASS 90 EPOXY RESIN and Hardener, and sufficient fibreglass cloth and chopped strand mat for the repair of a small damaged area. A detailed instruction pamphlet is enclosed with the pack, and a leaky exhaust or waste pipe or minor damage to a plywood or fibreglass hull can be speedily repaired.

## Epiglass Ding Kit

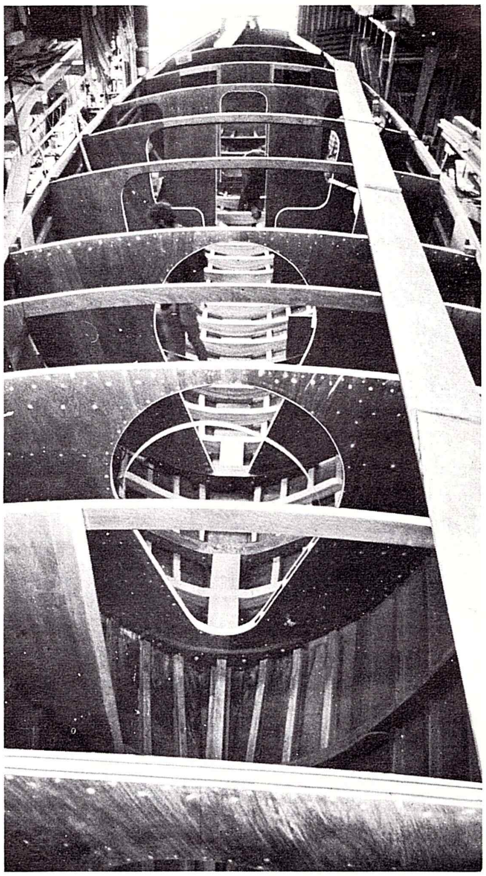
A useful thing to carry is an EPIGLASS DING KIT especially in these days when so many people are interested in surfing. This little pack contains a special gelled resin, plus a bottle of catalyst, pieces of chopped strand mat and fibreglass cloth, and even sandpaper for trimming the job up smooth again. In addition to the repair of surfboards, it is an ideal product for fixing minor damage to Polyester Fibreglass Dinghies.

## Epiglass Marinecoat Surfacing Compound

MARINECOAT SURFACING COMPOUND is for use in filling scratches, small indentations and coarse grain in timber and metals prior to final sanding and application of Marinecoat Acrylic Fortified Gloss Finish. Apply with putty knife to holes and scratches or thin slightly with mineral turps and apply with a soft, plastic squeegee for grain filling on wood. After approximately one hour, but preferably after overnight drying, MARINECOAT SURFACING COMPOUND may be sanded to a superfine finish ready for painting.

MARINECOAT SURFACING COMPOUND may be applied before or after MARINECOAT UNDERCOAT but should not be used on unprimed timber. It provides a perfect base for superfine Marinecoat Finishes.

MARINECOAT SURFACING COMPOUND should not be used under EPIGLASS REACTION LACQUER or other Two Pot materials.



*George Kiskaddon's "NEW WORLD" designed by John Spencer, showing filling with Epiglass Flashfix.*

# Sealing

## Sealants for Joints or Under Deck and Skin Fittings

There are plenty of places on most boats where a good sealing compound is needed when you are building, renovating or modifying. Whenever you are screwing metal onto wood, fitting glass to its frame, putting brass or chromed fittings on a steel or fibreglass hull – this is where you must have a good watertight seal. DON'T TAKE SHORT CUTS – SHORT CUTS RESULT IN PROBLEMS. Use the right sealant, follow instructions and save yourself a lot of time, worry and money.

WINDOWS AND PORTHOLE FITTINGS

1. Prime new timber with MARINECOAT RED LEAD TUNG OIL PRIMER and allow to dry. Remove all loose material and dirt from previously painted surfaces, allow to dry out thoroughly and spot prime as above. If Coamings are to be finished with one of the range of EPIGLASS clear Varnishes, seal the bedding area with this instead of Red Lead.
2. Use EPIGLASS BUTYL WINDSCREEN SEALANT BLACK or EPIGLASS BUTYL SEALFLEX WHITE. Both are ideally suited for this purpose. Be sure to leave a generous fillet of Sealant in the joint. Follow the instructions on the pack.
3. When the job is completed, all excess material is simply wiped off with a rag moistened with Mineral Turps.

HULL AND DECK FITTINGS, VENTILATORS, CLEATS, RING BOLTS ETC.

These do not normally cause direct leaks, but it is necessary to seal between the fittings and the hull to prevent water ingress which can lead to rot or corrosion. Prepare the surface as under "Windows and Porthole Fittings" above, and use EPIGLASS BUTYL SEALFLEX generously to make a bedding for the fitting before securing.

## Mast and Spar Fittings

When securing mast tracks or fittings to wooden or alloy masts they should be bedded down into EPIGLUE to give more secure fixing than would be obtained with screws alone.

Alloy surfaces must be clean and free of grease. Wash well with EPIGLASS RUST KILLER, rinse thoroughly and allow to dry before applying EPIGLASS EPIGLUE.

# Bedding of Steel Keels

RIGID BEDDING

EPIGLASS 90 EPOXY RESIN (mixed 2:1 by volume with its hardener) used in conjunction with fibreglass Chopped Strand Mat provides an outstanding reinforced plastic bedding with great mechanical strength. It is important when fitting the keel into the wetted out fibreglass fabric, that the keel bolts are tightened down before the resin has gelled. EPIGLUE or EPIFILL may be used in place of 90 RESIN if desired. On large yachts where a long open time is essential to allow for adjustments use EPIGLASS KEEL BEDDING COMPOUND.

**NOTE:** New steel keels should be sandblasted and receive at least one coat of EPIGLASS NEOSEAL before being fitted.

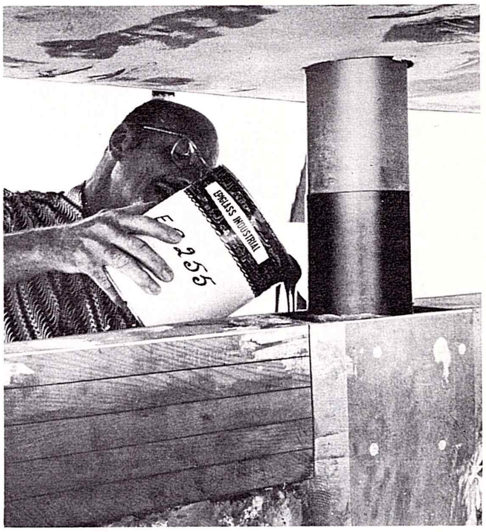
FLEXIBLE BEDDING

Prepare the bedding area as above, and apply a generous trowelled layer of EPIGLASS BUTYL SEALFLEX. Position the keel, and tighten all bolts within 6 hours.

Whether rigid or flexible bedding have been used, trim off any excess that may have exuded and use EPIGLASS EPIFILL for fairing off the outside of the joint.

# Lead Keels

Smooth and clean both surfaces Apply a generous layer of EPIGLUE, EPIFILL or EPIGLASS KEEL BEDDING COMPOUND to both faces. Tighten down the keel bolts before the bedding material has solidified. Allow overnight hardening, and fair off any excess bedding material.



*Epiglass Special Epoxy Casting resin being poured round the keel shaft of WAI-ANIWA.*

# Preserving

For boat construction on all frames, bilge timbers, and inside bulkheads, decks, cabin tops and sides, and for repair work use EVERDURE TIMBER PRESERVATIVE AND SEALER CONCENTRATE.

EVERDURE TIMBER PRESERVATIVE AND SEALER CONCENTRATE gives double action permanent protection. The high concentration of preservatives is carried into the pores of the timber along with the synthetic resin binder. The latter cures, becomes insoluble and water repellent, thus locking the preservatives in, and the water out. EVERDURE is the only safe form of surface applied preservative to use when building a boat. Creosote and Metal Naphthenates are greasy by nature and their use will weaken the adhesion of Glues, Fillers and Resins.

EVERDURE is a two part Epoxy Resin material containing Organic and Organo-metallic fungicides, bactericides, and preservatives. The Organic compounds are the well known and tried Chlorinated Phenols, but the Organo-metallic portion consists of Tri Butyl Tin Oxide, the wonder chemical which is much more effective than Copper for the prevention of the growth of organisms.

DIRECTIONS/USAGE

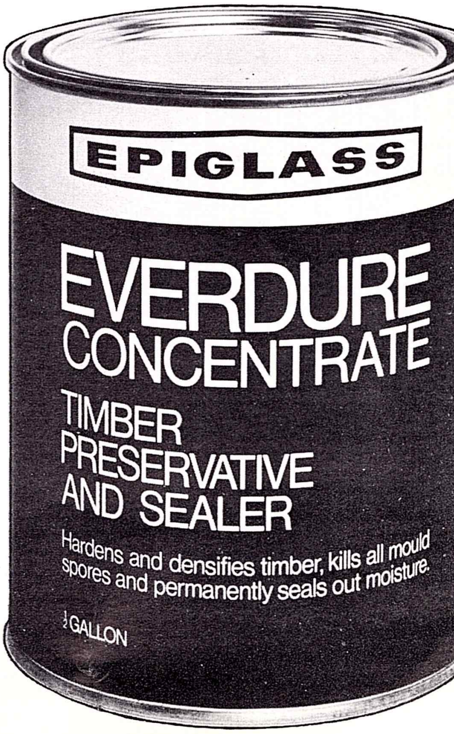
EVERDURE should be well mixed with an equal volume of its Activator, and can be used on all timber work to give a tough, hard preservative seal which will prevent the ingress of water. Deep penetration carries the Preservative Chemicals and the Nylon/Epoxy Waterproofing Resins down into the pores of the timber. Chemical reaction between the Nylon and the Epoxy waterproofs, hardens and densifies the timber as well as preventing leaching out of the preservatives. This double action gives permanent protection against dry rot, borer, etc.

BOAT CONSTRUCTION

EVERDURE should be used on all frames, bilge timbers and inside bulkheads which are to be sealed. For maximum protection and preservation, the premium process is to apply the mixed EVERDURE with an equal volume of EPIGLASS UNIVERSAL THINNERS as a priming coat and to follow this next day with a further coat of the undiluted product. One great advantage of this system is that no further treatment or painting is required. The timber is not obscured, and can be inspected for damage at any time. A cured EVERDURE film is completely resistant to Diesel Fuel, Lubricating Oil and Petrol. EVERDURE will not affect cured EPIGLUE, EPIGRIP or EPIGLASS 521 GLUE.

If your Hull is to be sheathed with EPIGLASS 90 or 90 RAPID RESINS, do not preprime the timber with EVERDURE since the absorbent properties of unsealed timber help to ensure good adhesion of the sheath. If you are using the EPIGLASS 65 RESIN system in which priming of the timber is recommended (see Sheathing Section), a thinned coat of EVERDURE is admirable for the purpose.

Protect and preserve plywood sheathing on Decks, Cabin Tops and sides, Caravan bodies, etc., by pre-priming on both sides with EVERDURE. **Pay particular attention to edges.** After leaving 7 days for full cure, normal finishing can be carried out using EPIGLASS MARINECOAT, EPIGLASS REACTION LACQUER, EPIGLASS MARINECOAT SPAR VARNISH or EPIGLASS EPIVAR. It is only necessary to sand lightly and wipe down with EPIGLASS CLEANING FLUID before proceeding with decoration. No further priming is required.


EPIGLASS
EVERDURE
CONCENTRATE
TIMBER
PRESERVATIVE
AND SEALER
Hardens and densifies timber, kills all mould spores and permanently seals out moisture.
½ GALLON

### REPAIR WORK

Cut out all dozey timber and apply a liberal coat of diluted EVERDURE and Activator so as to kill any residual mould spores and to harden and densify the immediate surroundings of the repair. After leaving for two or three days for the EVERDURE to harden, small repairs to non-load-bearing members can be made good with EPIFILL. Larger areas of damage should be repaired by gluing in new timber using EPIGLUE or EPIGRIP as an adhesive.

**EVERDURE CONCENTRATE is the ideal material for application to all timber which is to be exposed to wet conditions, and can be used on Trellis, Garden Furniture, etc.**

EVERDURE is easily applied by brush, roller or spray and great care should be taken to ensure that the whole of the area to be treated has been covered.

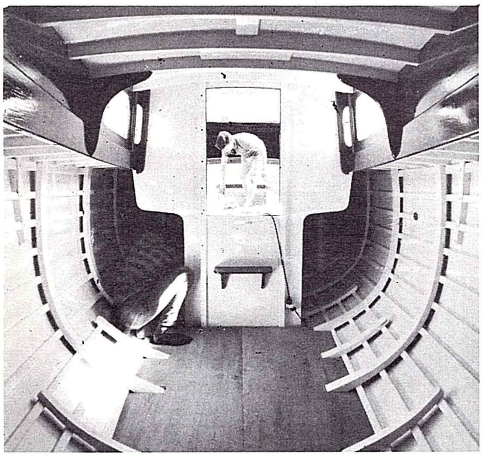
Use EPIGLASS CLEANING FLUID for the care of equipment.

### COVERAGE

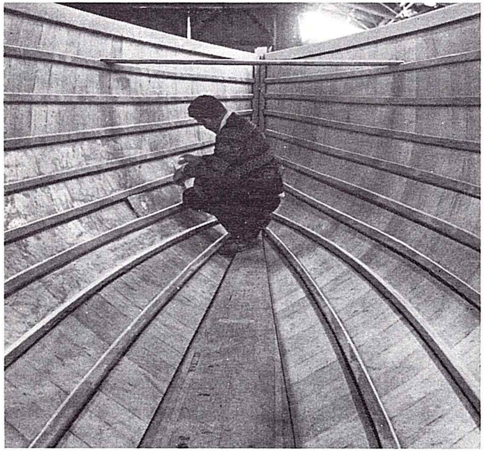
When using EVERDURE in its diluted form, one gallon total (One quart each of EVERDURE CONCENTRATE and EVERDURE ACTIVATOR CONCENTRATE, plus half a gallon EPIGLASS UNIVERSAL THINNERS) will cover 400 to 800 sq.ft. depending on the porosity of the surface. Undiluted EVERDURE CONCENTRATE will cover 600 to 800 sq.ft. per gallon of mixed material on second coat work, or 400 to 500 sq.ft. if used on bare timber.

**WARNING: In view of the high fungicide content of EVERDURE, great care should be taken to prevent skin contact. Accidental splashes should be washed off immediately with soap and water. Use only in well ventilated areas. Do not apply by spray without a face mask and protective clothing.**

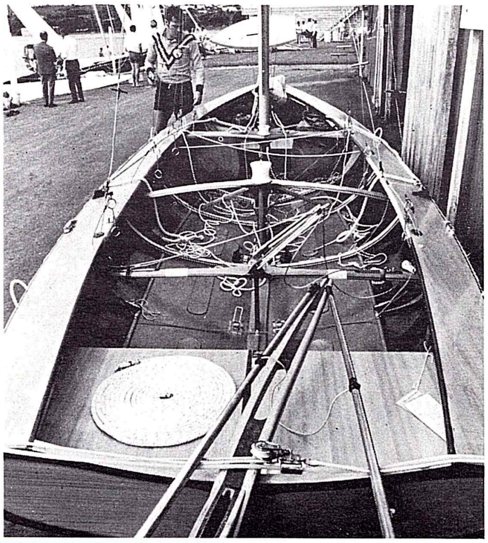
EVERDURE is not intended as a substitute for Tanalith, Celcure or Boric treatment, but is strongly recommended for use, under marine conditions, for the prevention of the ingress of water. It is particularly important that EVERDURE should be used on untreated timber.



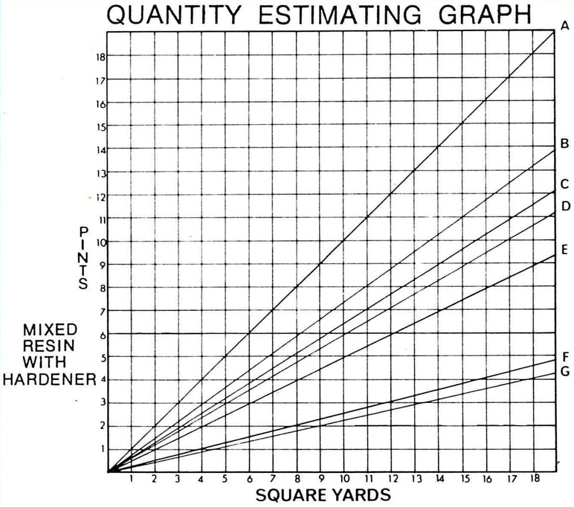
*A typical area where Everdure Timber Preservative can be used to great advantage.*



*IMPROBABLE, built by Keith Atkinson. This picture well illustrates the areas of application for Everdure, as does the opposite illustration of an '18-footer'.*



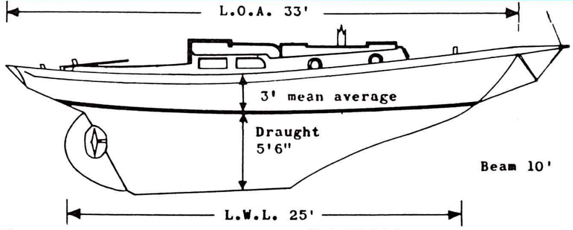
QUANTITY ESTIMATING GRAPH



- A EPIGLASS 90 or EPIGLASS 90 Rapid wetting coat over Dynel
- B EPIGLASS 90 or EPIGLASS 90 Rapid wetting coat over 6oz. Glass Cloth
- C EPIGLASS 90 Rapid second coat over 6oz. Glass Cloth or Dynel
- D EPIGLASS 65, wetting coat over 6oz. Glass Cloth
- E EPIGLASS 90, 90 RAPID, or 65 over 2.5oz. Glass Cloth
- F EPIGLASS 65, priming
- G One coat EVERDURE over bare timber (diluted material)

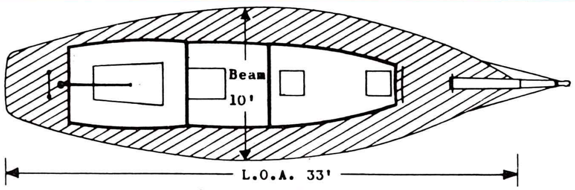
MARINE PAINT READY RECKONER

For estimating **approximate** surface areas to be painted.
N.B. Square footage determined by formulae set out below must always be related to 'coverage' as indicated on paint or varnish tins.

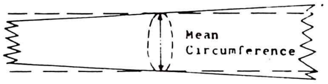


**TOPSIDES**
(L.O.A. + BEAM) x 2 x AVERAGE FREEBOARD
as example above
(33 + 10 x 2 x 3 = 258 sq. ft.

**BOTTOM**
L.W.L. x (BEAM **PLUS** DRAUGHT)
as example above
25 x (10 PLUS 5.5) = 387.5 sq. ft.



**DECKS (Shaded above)**
L.O.A. x BEAM x 0.75 – AREAS OF COCKPIT, CABIN TOP, ETC.



**MASTS AND SPARS**
LENGTH x MEAN CIRCUMFERENCE

# Sheathing

There is no doubt whatsoever that the best and most durable way to treat a Plywood or Laminated Wooden Hull is to sheath it with EPIGLASS 90 or 90 RAPID EPOXY Resins using fibreglass cloth or, better still, Dynel. Such a laminate strengthens the whole hull and, by leaving a completely join-free surface, disposes, once and for all, any danger of water ingress. Very little is added to the overall weight but, by virtue of the toughness, hardness and excellent adhesion of the skin, there is very much less danger of structural damage from floating debris.

A Polyester sheath, on the other hand, invariably becomes detached after a relatively short period of service and is no longer an integral part of the Hull. An EPIGLASS EPOXY RESIN skin remains permanently adherent even after many years. Old style single skin planked Hulls are not suitable for sheathing owing to the danger of splitting the Resin coat at the seams as the timbers move.

Of the many types of fabric available, Consolidated Chemicals' Chemists have found that Dynel and Surface Treated Glass Cloth are the best. Each has its advantages and these are set out opposite.

## COMPARATIVE PROPERTIES

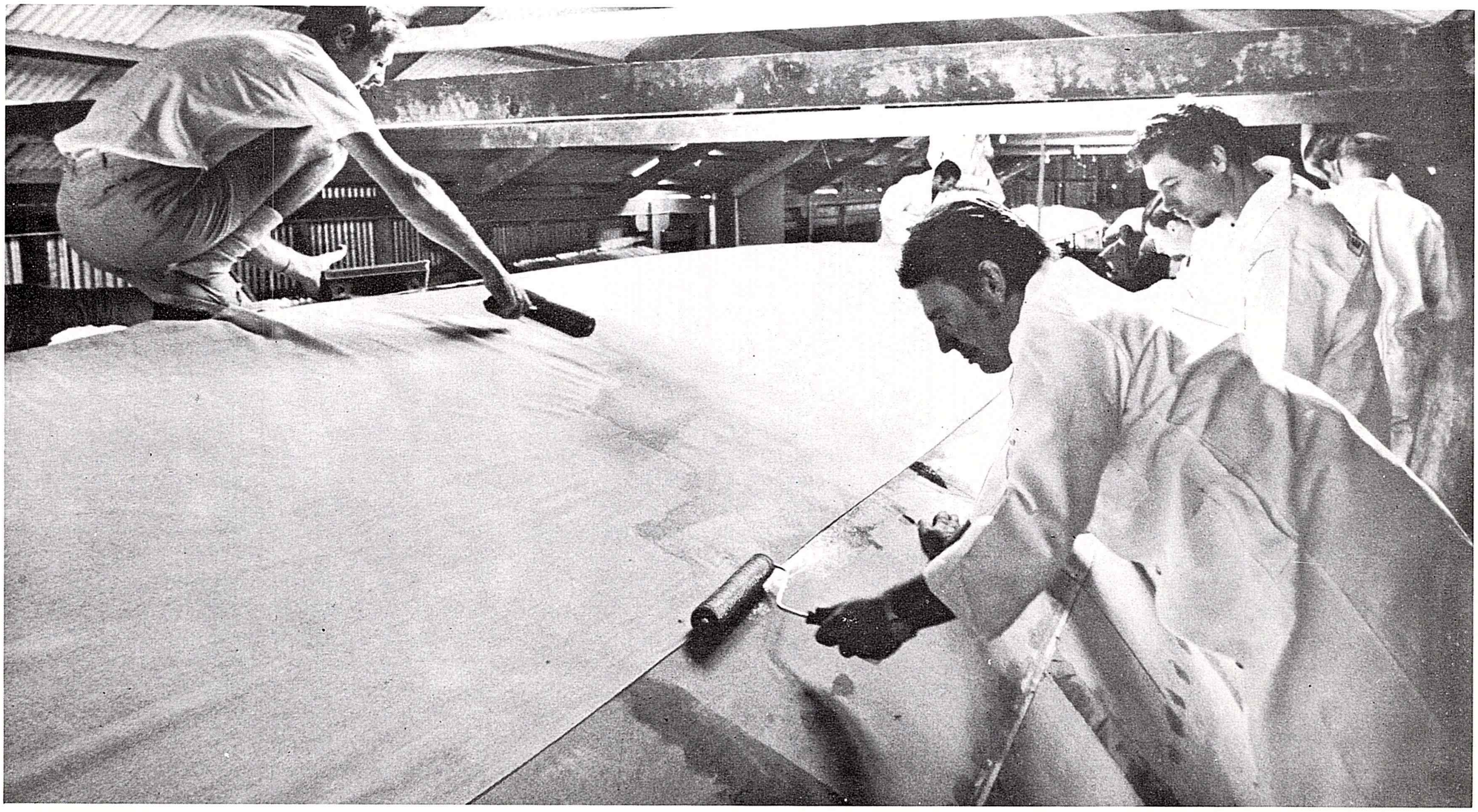
| | FIBREGLASS | | DYNEL |
|---|---|---|---|
| 1. | Provides a thinner and heavier laminate. | 1. | Provides a thicker but lighter laminate. |
| 2. | Good flexural strength. | 2. | Higher flexural strength. |
| 3. | High modulus of elasticity.<br>Note: A higher modulus of elasticity indicates greater rigidity. | 3. | High modulus of elasticity. |
| 4. | Good impact strength. | 4. | Greater impact strength. |
| 5. | Does not conform readily to complex curves. | 5. | Conforms readily to complex curves. |
| 6. | Good abrasion resistance. | 6. | Higher abrasion resistance. |
| 7. | Some incidence of skin irritation when sanding. | 7. | No skin irritation when sanding. |
| 8. | Easy wetting properties. | 8. | Easier wetting properties. |
| 9. | Slightly lower cost per square yard. | 9. | Slightly higher cost per square yard. |
| 10. | Unfilled Fibreglass cloth provides a moderately non-skid surface for Decks, etc. | 10. | Unfilled Dynel fabric provides an excellent non-skid surface for Decks, etc. |

From the above, it can be seen that, overall, Dynel is the top grade reinforcing fabric for sheathing on all wooden structures.

## STAGES IN SHEATHING WITH EPIGLASS EPOXY RESINS

| | **90** | **90 Rapid** | **65** |
|---|---|---|---|
| Prepare the timber, fill screw holes, etc. | Yes | Yes | Yes |
| Apply priming coat of Resin mixture. | Not required | Not required | 2 coats required |
| Tailor fabric and drape in position. | Yes | Yes | Yes |
| Mix Resin & Hardener proportions by volume. | 2:1 | 2:1 | 1:1 |
| Pour into shallow tray. | Yes | Yes | Yes |
| Apply with Mohair Roller. | Yes | Yes | Yes |
| Allow to dry and sand smooth. | Yes | Yes | Yes |
| Apply further coat of Resin. | Not required | Yes | Not essential |
| Fill weave with EPIGLASS REACTION LACQUER UNDERCOAT. | Yes | Not generally required | Yes |
| Apply finishing coats. | Yes | Yes | Yes |

For fuller details on each system refer following pages.



*On boats small or large the Epiglass sheathing systems have many benefits. This picture illustrates the application of Epiglass 90 Epoxy Resin/Dynel Sheathing System to Mr. Tom Clark's 73' BUCCANEER.*

# Choosing The Resin System

### EPIGLASS 90 RAPID SYSTEM

The new Epiglass 90 Rapid system has been especially designed for use when applying Glass Cloth or Dynel. The Epiglass 90 Rapid system is a revolutionary development and offers the following advantages:

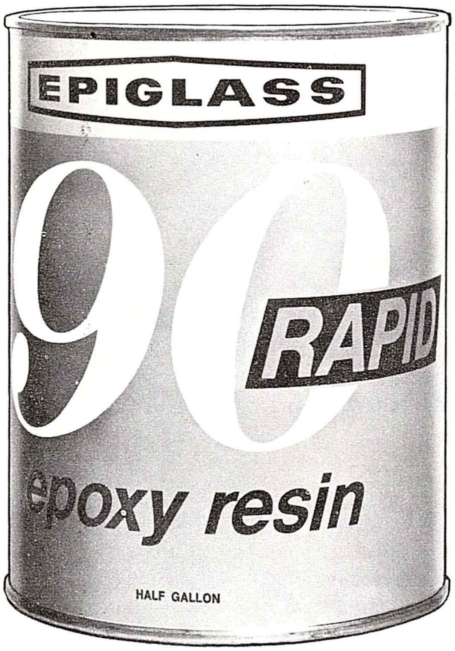
1. Savings in cost and time.
2. The Laminate is pigmented white right through.
3. Speed – no priming coat is necessary and two coats of Epiglass 90 Rapid result in a surface ready for the application of Finishing Coats.
4. Epiglass 90 Rapid is non-sagging and stays put.

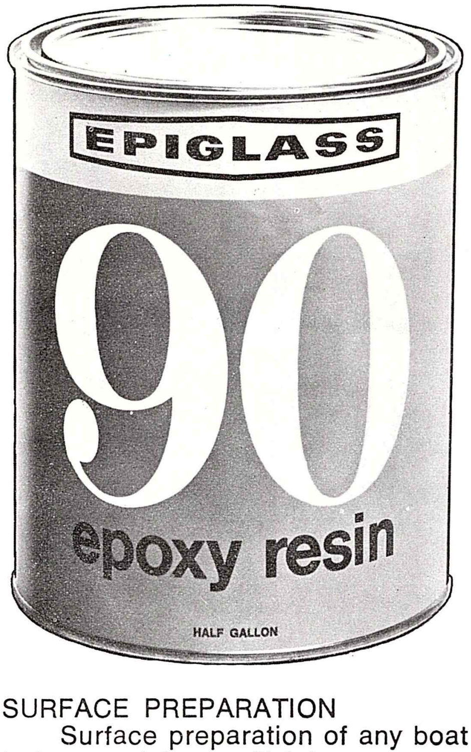
### EPIGLASS 90 RESIN SYSTEM

The Epiglass 90 Resin system with Fibreglass cloth, Dynel or other synthetic fibre overlays is the premium Resin system. It has been tried and tested over many years and is performance proven. With either type of reinforcing cloth the Epiglass 90 Resin system is quick, easy, and gives the optimum in adhesion and strength. The finished cost per square yard is slightly higher than with 90 Rapid or 65 Resin. No **priming** coat is necessary and only one application of Resin/Hardener mixture is called for. A second application can be applied should you wish to reduce the weave filling labour time later.

### EPIGLASS 65 RESIN SYSTEM

Epiglass 65 Resin was the first Epoxy Resin manufactured by Consolidated Chemicals for the sheathing of boats and is still available. It is the cheapest sheathing Resin on the market. Epiglass 65 Resin is only suitable for use with Glass Cloth and should not be used with Dynel. The use of Epiglass 65 Resin should be confined to the smaller type of craft up to, say, 16 feet length overall.





### SURFACE PREPARATION

Surface preparation of any boat before applying an Epiglass reinforced plastic skin is most important. The finished job will only be as good as the surface you start with. The timber should be clean and dry and free of paint, oil and varnishes. Epiglass Resins applied over paint or varnish will soften the paint and be only as strong as the adhesion of the paint underneath. Remove all old putty and replace with EPIFILL or FLASH-FIX. Sand down hull with coarse and then medium garnet paper to provide a good even surface.

### SURFACE FILLING

To obtain a good basic surface use EPIGLASS EPIFILL or FLASH-FIX and fill all nail holes, seams, cracks or splits. Radius internal corners and angles (e.g. between hull and chine battens or keel) with EPIFILL This is particularly important when sheathing, for example, clinker built dinghies. Use the end of your finger or a small putty knife to round out the EPIFILL in internal angles. When the EPIFILL has hardened, sand down the whole of the surface with fine garnet paper. EPIGLASS EPIFILL (see Filling section) is the most suitable filler for use prior to using Dynel or Fibreglass. EPIGLASS FLASH-FIX is satisfactory for general filling and has the advantage of setting-up quickly, thus permitting sanding within 30 minutes of application but, where maximum flexibility and adhesion are necessary, it is better to use EPIFILL.

### FOR GLASS CLOTH

Make sure that all edges and inside corners to be covered with Glass Cloth are rounded to a minimum 3/16″ radius or approximately the diameter of a pencil. This is absolutely essential as Glass Cloth wil not take a right angle bend.

### FOR DYNEL

Dynel will take a sharper turn than Fibreglass because the individual fibres are extremely flexible and so a 1/8″ radius is ample. For this reason Dynel should always be used for sheathing clinker built craft.

### PRESERVING

If desired, soft or very porous timbers may be primed with diluted EVERDURE. When using 65 Resin this EVERDURE treatment should be considered as taking the place of the first thinned out priming coat. (Priming coats are necessary before the application of the 65 Resin system.)

When using 90 or 90 Rapid Resins this prepriming is not good practice since it may reduce final adhesion of the skin.

### SKINNING

The mixing proportions of all EPIGLASS EPOXY RESIN mixtures are simple. 90 Resin and 90 Rapid are mixed at two to one by volume with their Hardeners but 65 Resin is mixed at one to one with its Hardener. Careful measuring followed by very thorough mixing is essential, and no more should be mixed at any one time than can be used within the pot life of the material. Fabric joints should, preferably, be butted together and overlaps should be kept to a minimum so as to reduce subsequent sanding. When using 90 and 90 Rapid Resins no priming coats are necessary (with 65 Resin, priming is essential).

The Resin/Hardener mixture should be applied with a mohair paint roller directly to the fabric which has been tailored to shape and smoothed out on to the surface of the boat. Apply the Resin mixture liberally and roll well in. You may use a paint brush or squeegee if you wish but a roller is faster and easier. Great care must be taken to remove all air bubbles and wrinkles by rolling towards the edges. Although a liberal application is necessary, it should be noted that an excessively heavy coat will cause Fibreglass to ripple. In the case of Dynel, which is very light in weight, the fabric will actually float on the surface of an excessively heavy layer of Resin, rather than being in close contact with the timber.

It is best to carry the Resin impregnation slightly beyond the edge of the gunwhale, tuck, etc., so that a neat cut off joint may be made when the Resin has hardened. The edges should be trimmed off using a sharp knife. When sheathing to the chine only, make sure of a neat margin by applying Masking Tape just beyond your finishing line. The Resin will not adhere to this. With 90 or 90 Rapid the whole of the skinning operation should be completed in one day and it should then be left to harden. Care should be taken to prevent the temperature from dropping below 50°F during cure and if it can be maintained above 60°F it will be advantageous. In cold or damp weather, a protective Glycol film forms on the surface of the laminate so as to ensure cure of the Resin. If this is not removed it could lead to lack of adhesion to subsequently applied systems. Wet sanding or washing with hot water and SEACLEAN detergent is sufficient to remove the film entirely. In warm weather this film just vaporises away as the Resin cures.

**When using 65 Resin,** as mentioned above, it is necessary to prime the timber before application of the Glass skin. Use a mohair paint roller and proceed as follows:

1. Prime the timber with one part 65 Resin, one part 121 Hardener, plus ½ part EPIGLASS UNIVERSAL THINNERS. Allow to harden for an hour or so.
2. Apply a second coat of the same mixture and leave 24 hours to harden. In cold weather a slight 'bloom' may appear on the surface and this should be removed by wiping with EPIGLASS CLEANING FLUID or by washing with Seaclean Detergent and hot water. In warm summer weather there is no sign of this and the application of the Glass Cloth can be commenced as soon as the second priming coat is well touch dry.
3. Tailor the Glass Cloth to fit the hull and drape it in position. Now mix equal parts Resin and Hardener but no Thinners and apply a full saturating coat of this mixture so that the Glass is well wetted. As with 90 and 90 Rapid it is necessary to work towards the edges of the Glass Cloth so as to ensure that no wrinkles or air bubbles are left.
4. After the Resin has hardened for a few days it should be wet sanded and the weave should then be filled in the same way as for 90 Resin.

### POT LIFE (Mixed)

90 and 90 Rapid: 15-25 minutes depending on temperatures and quantity mixed. Suggested maximum quantity to mix: 1 pint Resin and ½ pint Hardener.

65 Resin: 30-60 minutes for 1 pint Resin plus 1 pint Hardener.

### FILLER-UNDERCOATING

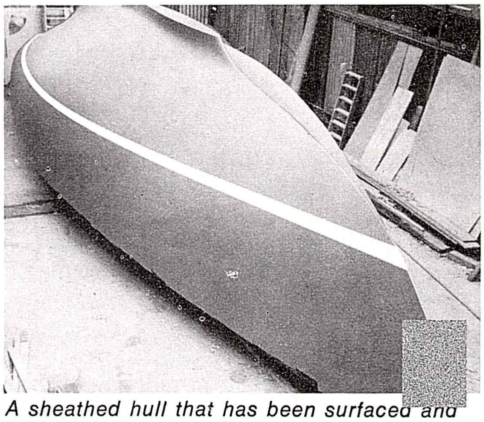
### EPIGLASS 90

When the fabric skin has hardened sufficiently, it should be lightly sanded to remove imperfections. Any overlaps should be carefully trimmed with a Surform Plane or Rasp. Then wash down with SEACLEAN detergent and hot water to ensure that the Glycol film has been removed.

When the surface has dried off, the weave must be filled by the application of two or three heavy coats of EPIGLASS REACTION LACQUER UNDERCOAT SURFACER. This is a two-pot Polyurethane Material having excellent sanding properties. Application may be by brush, roller or spray gun. Of these, the last named will give the best surface since this material is fast setting. When applying by spray a "Wet-on-Wet" technique may be followed. After 6-12 hours drying, the Undercoat film should be wet sanded with 240 then 400 grit paper. Any imperfections should be made good with a further coat of REACTION LACQUER UNDERCOAT SURFACER. As a cheaper alternative to REACTION LACQUER UNDERCOAT SURFACER **on top sides only,** MARINECOAT UNDERCOAT SURFACER may be used but a longer period should be left before final sanding (approx. 48 hours).

On boats which are to be left on moorings, areas below the waterline should receive two coats of EPIGLASS ANTIFOULING over the rubbed down REACTION LACQUER UNDERCOAT SURFACER. No intervening coats are required. Application of EPIGLASS UNDERWATER PRIMER UNDERCOAT (which has been designed for use on the underwater areas of Wooden Hulls that have not been fibreglassed) will serve no useful purpose. The adhesion of EPIGLASS ANTIFOULINGS to a cured Epoxy Resin film or to REACTION LACQUER UNDERCOAT is excellent.

Small Trailer boats which will never be left in the water for more than a few hours can be treated with MARINECOAT UNDERCOAT SURFACER and Marinecoat Finishing all over. If, however, there is any likelihood of the boat ever being moored overnight (during holiday periods, for example) it is essential that REACTION LACQUER UNDERCOAT followed by REACTION LACQUER or EPIGLASS LIGHT DUTY VINYL PASTEL ANTIFOULING should be applied to the areas below the waterline. (See Marinecoat section later in this Manual.)



*A sheathed hull that has been surfaced and rubbed down in readiness for final painting.*

### EPIGLASS 90 RAPID

No undercoats are normally required, but careful sanding is necessary and any laps should be smoothed out after the first Resin coat. Before applying the second coat of Resin it is essential to ensure that all traces of Glycol film have been removed by washing down or wet sanding. The second coat of 90 Rapid should be applied by roller and followed immediately with a 4″ paint brush so as to smooth out the surface. After leaving one or two days for the system to harden, it

should be sanded smooth (preferably wet) **starting with medium paper and finishing with 240-400.** For a really superfine finish, one coat of REACTION LACQUER UNDERCOAT mixed with its Hardener may be applied if desired. On topsides only, MARINE UNDERCOAT SURFACER may be used, **but not below the waterline.**
For finishing below the waterline it is possible to apply EPIGLASS ANTIFOULING direct to the sanded back EPIGLASS 90 RAPID RESIN, providing the weave of the fabric is well filled, with no pin holes, and the surface is sanded smooth. If, after applying the second coat of EPIGLASS 90 RAPID RESIN, the underwater section still requires surfacing we would recommend the application of one coat of EPIGLASS REACTION LACQUER UNDERCOAT. After drying, this should be sanded smooth and followed with two coats of one of the EPIGLASS ANTIFOULING systems.

EPIGLASS 65

Weave filling should be carried out exactly as with EPIGLASS 90 RESIN (see previous page)

FINISHING (TOPSIDES, ETC.)

No matter which Resin system has been used, the finishing coat should consist of either EPIGLASS REACTION LACQUER mixed at two to one by volume with its Hardener or EPIGLASS MARINECOAT ACRYLIC FORTIFIED GLOSS FINISH.

FINISHING (BELOW THE WATERLINE)

Boats that are to be left on moorings, particularly in salt water, must be finished with Antifouling. (Epiglass manufacture four grades of Antifouling – see Antifouling section). The ideal below-the-waterline system for day boats, dinghies, etc., that are not moored is EPIGLASS REACTION LACQUER. Boats that are never left in the water overnight may be finished both above and below the waterline with EPIGLASS MARINECOAT ACRYLIC FORTIFIED GLOSS FINISH.

CLEANING AND THINNING

All equipment should be cleaned with EPIGLASS CLEANING FLUID and, during the skinning operation, it is essential to make certain that brushes and rollers are not allowed to harden. It is not sufficient merely to leave them soaking in Cleaning Fluid. They should be washed and freed from excess solvent before continuing. Upon completion all equipment should be well cleaned and dried before putting away. EPIGLASS UNIVERSAL THINNERS or SPRAYING THINNERS should be used for thinning REACTION LACQUER but Mineral Turps is adequate for MARINECOAT.

# PAINTING AND PRESERVING YOUR BOAT

It is an established fact that the salt and mineral content, as well as the marine organisms present, differ radically from hemisphere to hemisphere, ocean to ocean, and lake to lake. This explains why so many overseas paint formulations fail so completely in local application. Many seasons of exhaustive evaluation under severe conditions have conclusively proved that EPIGLASS marine products are best.

The basic rule for all marine painting is: YOU WILL NEVER GET AWAY WITH ANY CARELESS WORK. You will always pay for it sooner or later – usually sooner. Poor preparation or poor painting lead to performance loss, rotting, leaks, rust and shabby appearance. In extreme cases, they could even contribute to a fatal accident. Badly painted wood can become waterlogged, and in storm conditions this loss of buoyancy can mean disaster.

Follow the EPIGLASS guide-lines and you won't go wrong.

NEW WOODEN HULLS
(Above waterline)

1. Clean out all imperfections, screw and nail holes etc.
2. Stop up with EPIFILL or FLASH-FIX.
3. Sand smooth and remove all dust.
4. Apply one brush coat of MARINECOAT TUNG OIL RED LEAD PRIMER, or MARINECOAT UNDERWATER PRIMER UNDERCOAT or MARINECOAT WHITE TIMBER PRESERVATIVE, at 65-70 sq.ft./pint. Allow to dry, sand lightly and dust off.
5. Apply one coat of MARINECOAT UNDERCOAT SURFACER at 65-70 sq.ft./pint. Allow to dry.
6. Sand smooth, spot fill with MARINECOAT SURFACING COMPOUND, allow to harden and again sand with fine paper.
7. Apply one further coat of MARINECOAT UNDERCOAT SURFACER at 65-70 sq.ft./pint. Allow to dry. Sand smooth with fine paper.
8. Allow to harden thoroughly and apply two coats MARINECOAT PLASTIC GLOSS FINISH in your selected colour at 70-75 sq.ft/pint/coat. Allow overnight drying between coats. EPIGLASS REACTION LACQUER can be used instead of Marinecoat, if desired (refer section on this product).

NEW WOODEN HULLS
(Below waterline)

NORMAL PROCEDURE.

1. Clean out all imperfections, screw and nail holes etc.
2. Stop up with EPIFILL or FLASH-FIX.
3. Sand smooth and remove all dust.
4. Apply a full brush or roller coat of MARINECOAT UNDERWATER PRIMER UNDERCOAT at 65-70 sq. ft./pint. Never prime or undercoat underwater areas with normal air drying systems since subsequent immersion will cause swelling and blistering. EPIGLASS MARINECOAT UNDERWATER PRIMER UNDERCOAT has been specially formulated for use in these areas and, providing the film has hardened thoroughly, it is unaffected even by permanent immersion.
5. Allow to dry for 16-18 hours or longer and apply a second coat of the same material.
6. Allow to dry for at least 24 hours and follow with two generous coats of EPIGLASS Heavy Duty, or Light Duty or Hi-Speed Copper, VINYL ANTIFOULING or PACIFIC ANTIFOULING at 35-40 sq.ft./pint/coat. If Vinyl Antifouling is used the boat may be launched within 24 hours, or left on the hard for up to three or four weeks if desired.

**IF PACIFIC ANTIFOULING IS USED YOU MUST LAUNCH WITHIN 24 HOURS.**

FOR A SMOOTH RACING BOTTOM.

Prepare hull as in "New Wooden Hulls (Below waterline)". Allow the antifouling to harden for 2-3 days and, immediately before the first race, polish the whole underwater surface using 400-500 grit wet paper. FOR MINIMUM SKIN FRICTION USE EPIGLASS HI-SPEED COPPER ANTIFOULING. (Refer to section devoted to this product in this manual).

NEW WOODEN HULLS.
To be Dynel or Fibreglass sheathed.

ABOVE THE WATERLINE:
1. Fibreglass or Dynel your hull according to sheathing instructions in this Manual.
2. Lightly sand the surface and apply EPIGLASS REACTION LACQUER (mixed with its hardener 2:1 by volume), or MARINECOAT PLASTIC GLOSS FINISH, both at a spreading rate of 70-75 sq.ft./pint.

BELOW THE WATERLINE:
1. Fibreglass or Dynel your hull according to sheathing instructions in this Manual.
2. Sand smooth with Wet or Dry paper and wipe down.
3. Apply at least two full coats of EPIGLASS Heavy Duty, Light Duty, or Hi-Speed VINYL ANTIFOULING, or PACIFIC ANTIFOULING, at 35-40 sq.ft./pint/coat.

NO PRE-TREATMENT WITH MARINECOAT UNDERWATER PRIMER UNDERCOAT IS NECESSARY, OR IN FACT, DESIRABLE.

If a particularly smooth Racing Bottom is required use EPIGLASS HI-SPEED COPPER ANTIFOULING.

NEW WOODEN HULLS.
(Interior)

BILGES, SEALED BULKHEADS, ETC.

Prevent dry rot and deterioration by application of EVERDURE CONCENTRATE and its Activator mixed one to one by volume. The mixture should be diluted with an equal volume of EPIGLASS UNIVERSAL THINNERS so as to ensure maximum penetration but may be used undiluted for a second coat. (See PRESERVING SECTION in this Manual).

All other interior areas should receive one coat MARINECOAT TUNG OIL RED LEAD PRIMER at 65-70 sq.ft./pint, plus one coat MARINECOAT UNDERCOAT SURFACER at 65-70 sq.ft./pint, followed by two coats MARINECOAT PLASTIC GLOSS FININSH at 70-75 sq.ft./pint in selected colour.

Varnished areas should receive at least three coats of MARINECOAT SPAR VARNISH, or EPIVAR (mixed with its hardener 2:1 by volume), or INDOTHANE Gloss or Satin at 55-65 sq.ft./pint/coat. (Refer Varnish section).

OLD PAINTED WOODEN HULLS.
(Above waterline)

OLD PAINT IN GOOD CONDITION
1. Wash down with fresh water to remove all salt deposits. Allow to dry.
2. Sand thoroughly to a smooth surface and dust off.
3. Stop all holes with EPIFILL or FLASH-FIX. Allow to harden. Sand smooth.
4. Spot prime, if required, with EPIGLASS MARINECOAT TUNG OIL RED LEAD. Allow to dry and fill minor imperfections with EPIGLASS MARINECOAT SURFACING COMPOUND. Allow to harden and sand smooth.
5. Apply one coat MARINECOAT UNDERCOAT SURFACER at 65-70 sq.ft./pint. Allow to dry and sand smooth.
6. Apply two coats MARINECOAT PLASTIC GLOSS FINISH in selected colour at 70-75 sq.ft./pint/coat.

OLD PAINT IN POOR CONDITION.
1. Remove old paint with EPIGLASS HEAVY DUTY PAINT & VARNISH REMOVER, or by sanding, or by burning off. If Paint Remover has been used it is essential to make sure that all traces have been removed from joints, crevices and corners and that all old fillers or putty that may have been softened, have been scraped out (see Paint Remover General section later).
2. Treat as for new unpainted hull.

OLD PAINTED WOODEN HULLS.
(Below waterline)
1. Thoroughly sand off powdery and loose Antifouling paint. Wash down with fresh water to remove all salt and allow to dry.
2. Spot prime any bare spots with MARINECOAT UNDERWATER PRIMER UNDERCOAT. Allow to dry at least 16 to 18 hours.
3. If the general condition of the hull is good, apply two full coats of EPIGLASS Heavy Duty, or Light Duty or Hi-Speed VINYL or PLASTIC ANTIFOULING at 35-40 sq.ft./pint/coat. If the condition of the old paint is rather worn and a large number of bare spots have had to be touched up, then apply one all-over coat of MARINECOAT UNDERWATER PRIMER UNDERCOAT at 65-70 sq.ft./pint. Let harden for 24 hours before applying antifouling.

If Vinyl Antifouling has been used, the boat may be left out of the water for up to four weeks, or it may be launched at once.

For greater economy, apply two full bodied coats of PACIFIC ANTIFOULING (instead of Vinyl), but you MUST launch within 24 hours.

NOTE:
MARINECOAT PLASTIC GLOSS FINISH is especially designed for use on topsides to give a sparkling, durable finish which will withstand sun, wind and salt spray. It is NOT intended to be subjected to continuous immersion, whether in salt or fresh water. No one-pot air-drying finish is suitable for such conditions. Below the waterline, use EPIGLASS VINYL (Heavy or Light Duty or Hi-Speed Copper) or PACIFIC ANTIFOULING and on the boot top EPIGLASS BOOT-TOPPING, or EPIGLASS REACTION LACQUER.

OLD PAINTED WOODEN HULLS.
(Interior)
NEW OR BARE TIMBER.

Treat with one coat MARINECOAT TUNG OIL RED LEAD PRIMER at 65-70 sq.ft./pint, followed with one coat MARINECOAT UNDERCOAT SURFACER at 65-70 sq.ft./pint. Finish with MARINECOAT PLASTIC GLOSS FINISH at 70-75 sq.ft./pint in selected colour.

SOUND PAINT WORK.

Sand lightly, dust off and apply one coat of MARINECOAT PLASTIC GLOSS FINISH at 70-75 sq.ft./pint in selected colour.

SOUND OLD VARNISH WORK.

Sand lightly, dust off and apply one coat of MARINECOAT SPAR VARNISH, or INDOTHANE Gloss or Satin, at 55-65 sq.ft./pint.

UNSOUND OLD VARNISH OR PAINT WORK.

Strip all unsound varnish or paint and treat as new work. (Refer section on Epiglass Heavy Duty Paint & Varnish Remover later in this Manual).

DECKS.
(New Unpainted)

**A.** A fibreglass or Dynel skin using EPIGLASS 90 or 90 RAPID and their appropriate hardeners, is strongly recommended for new plywood and timber decks to give a strong, durable and waterproof finish. Full details of the technique involved are given in the section devoted to "Sheathing".

If a non-skid deck finish is required, two systems are available:
1. For a heavy duty non-skid surface, use EPIGLASS SAFE DECK. (See under section devoted to this product for details of application on p. 34); **or**
2. Apply two coats of MARINECOAT NON-SKID DECK FINISH at 70-75 sq.ft./pint/coat in selected colour.

12

NOTE:

If Dynel has been used to skin the deck a reasonably non-skid finish is ensured by omitting all weave filling, sanding only very lightly, and following with one coat of EPIGLASS REACTION LACQUER (mixed at 2:1 by volume with its hardener) at 65-70 sq.ft./pint of mixed material, or one coat of MARINECOAT PLASTIC GLOSS FINISH at 70-75 sq.ft./pint in selected colour.

**B.** 1. On bare timber not to be fibreglassed, stop all holes and minor surface cracks, etc. with EPIGLASS, EPIFILL or FLASH-FIX and sand smooth.

2. Apply one coat MARINECOAT TUNG OIL RED LEAD PRIMER or MARINECOAT WHITE TIMBER PRESERVATIVE at 65-70 sq.ft./pint. Allow to dry for at least 24 hours. EPIGLASS MARINECOAT SURFACING COMPOUND may be used for filling minor imperfections. Allow to harden and sand smooth.

3. Apply one coat MARINECOAT UNDERCOAT SURFACER. Allow to dry. Sand lightly and dust off.
Finish with two coats MARINECOAT NON-SKID DECK FINISH at 70-75 sq.ft./pint/coat in selected colour.

**Alternatively**

Finish as follows:
A. Apply one coat of Marinecoat Gloss and allow to dry.
B. Mask out walkways, etc., and apply another full coat of Marinecoat Gloss to them.
C. Whilst the Marinecoat is still wet, sprinkle liberally with Epsom Salt. The first shower of rain will wash out the Epsom Salt Crystals, leaving a series of fine craters. These give good traction to bare feet but will not wear out the seat of your shorts! When repainting time comes round, simply sand smooth and repeat the process.

DECKS
(Old Painted)

If paint is in poor condition remove with EPIGLASS HEAVY DUTY PAINT & VARNISH REMOVER or by sanding or burning off. If Paint Remover has been used make sure that all old putty or fillers that may have been softened, have been removed. Treat as new work.

If paint is in good condition:
1. Sand smooth. Fill nail holes and imperfections as in B.1. opposite. Sand smooth and dust off.
2. Spot prime with MARINECOAT TUNG OIL RED LEAD PRIMER or MARINECOAT WHITE TIMBER PRESERVATIVE at 65-70 sq.ft./pint. Allow to dry overnight.
3. Apply one coat MARINECOAT UNDERCOAT SURFACER, allow to dry, sand lightly and dust off. Finish with two coats MARINECOAT NON-SKID DECK FINISH, or MARINECOAT PLASTIC GLOSS FINISH at 70-75 sq.ft./pint/coat.

BRIGHT WORK AND VARNISH WORK

With clear varnish, more than with any other material, final durability is a matter of film thickness. Even the EPIGLASS range cannot keep you trouble free unless you put enough on – a minimum of five coats outside, or three inside, at a covering rate of 55-65 sq.ft./pint/coat.

In service, keep a watchful eye on all varnish work. Before it begins to deteriorate seriously, sand lightly, and apply another coat. Regular attention of this sort will mean many years of service with minimum maintenance.

NEGLECT LEADS TO TIRESOME SCRAPING, SANDING AND RE-VARNISHING

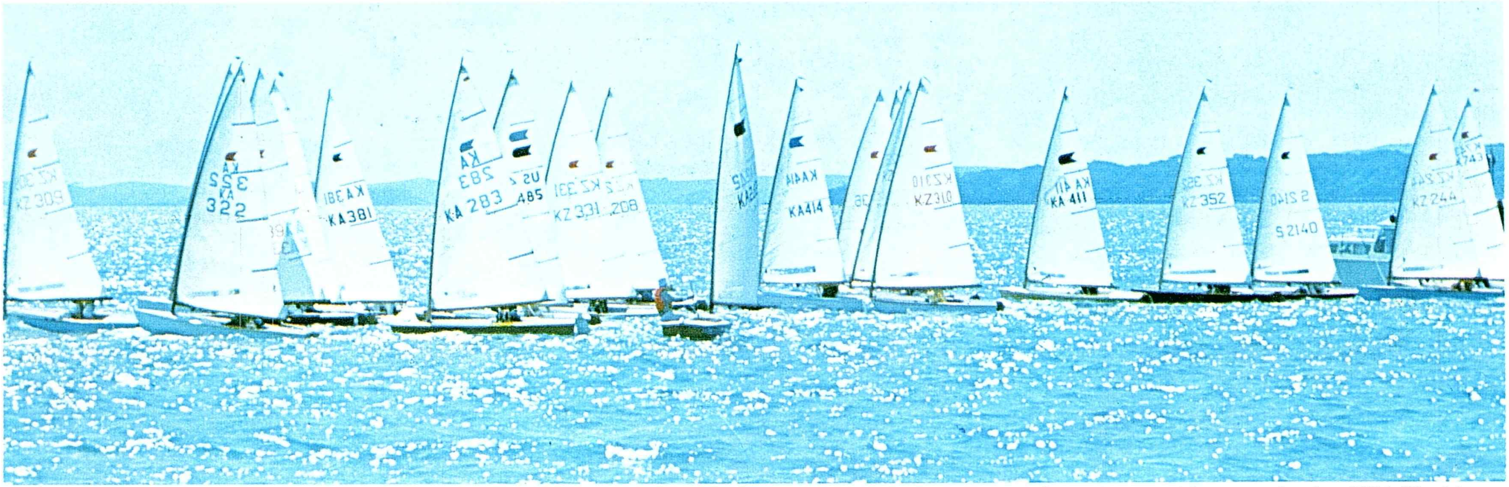
Oily timbers such as teak should be washed with Trichlorethylene or Methylene Chloride and allowed to dry, immediately before varnishing. The first coat should be thinned 10% so as to aid penetration.

NEW WORK
1. Before commencing work, seal the plywood or timber (and prevent subsequent overstaining from coloured filler) by applying a thin brush coat of your chosen EPIGLASS varnish, diluted in equal volume with its appropriate thinner.
**Make sure not to load nail holes, etc. as this can impair subsequent adhesion of the filler.**
2. Sand smooth and dust off.
3. Stop up with EPIGLASS EPIFILL (For shallow filling on interior work only, DAP Wood Dough is excellent). Sand smooth and remove all dust.
4. Apply one coat of selected EPIGLASS varnish thinned at least 10% with its appropriate thinner. Allow to dry.
5. Allowing adequate drying time and in all cases sanding lightly and dusting off between coats, apply a minimum of two further coats for interior, and a minimum of four further coats for exterior work.

You have the choice of EPIVAR TWO-POT POLYURETHANE SPAR VARNISH, MARINECOAT POLYURETHANE SPAR VARNISH, INDOTHANE GLOSS or TIMBERTONE VARNISH (See pages 28 & 29)

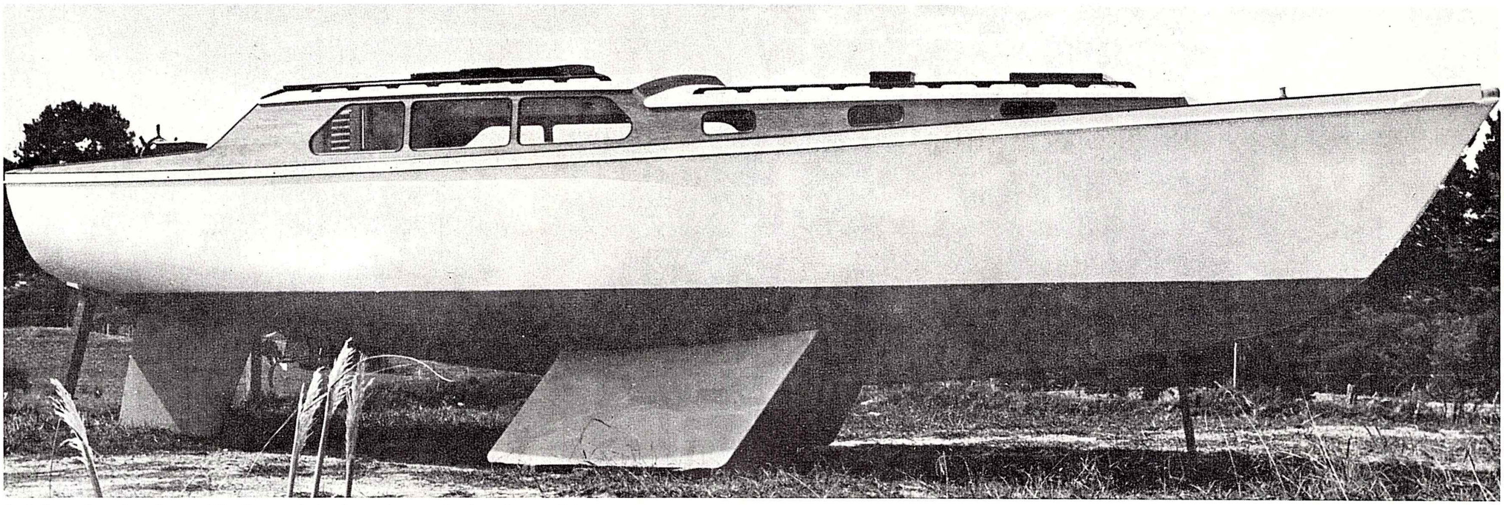
NOTE:

When using EPIVAR TWO-POT POLYURETHANE SPAR VARNISH, recoating must be carried out at NOT MORE than 24 hour intervals, and preferably NOT MORE than 6 hour intervals. If this 24 hour period has been exceeded, sand thoroughly, wipe down with a cloth moistened with EPIGLASS UNIVERSAL THINNERS before proceeding. This will assist intercoat adhesion.



*WAI-ANIWA, built in aluminium by Steel Yachts & Launches Ltd., and painted above the waterline with Epiglass Marinecoat Special Orange. Painted below the waterline with Epiglass Shark White Pastel Antifouling.*

*O.K.'s taking part in the 1971 World Championship Series.*



*A bilge keeler beautifully painted and ready for launching.*

EPIGLASS STAIN ADDITIVE is the new approach to treatment of bright work. To brighten or modify the colour of the timber or hide water stains on old work, use up to 1 fl. oz. of this material to each one pint of varnish for the first coat only. Alternatively, EPIGLASS STAIN ADDITIVE may be applied to the bare timber with a soft pad, either in concentrated form or diluted at up to 1:5 by volume with Methylated Spirits. (One part Stain Additive to five parts Methylated Spirits.)
A range of six light-fast shades is available.

After allowing to dry, apply EPIVAR, MARINECOAT POLYURETHANE SPAR VARNISH or INDOTHANE GLOSS.

For grain filling, toning and sealing in one application EPIGLASS TIMBERTONE may be employed. This product is available in Neutral Clear and eleven wood colours. (See page 29 for further details on this product.)

OLD VARNISH IN GOOD CONDITION

1. Sand well back to achieve a smooth, non-glossy surface. Dust off. Look carefully at perished places on corners. If there are many of these, treat as under 'Poor Condition' below.
2. Wipe over liberally with EPIGLASS UNIVERSAL THINNERS.
3. Apply at least three or four coats EPIVAR, MARINECOAT POLYURETHANE SPAR VARNISH or INDOTHANE GLOSS at 55-65 sq. ft./pint/coat.

**NOTE: Do not use EPIVAR on recoat work except over itself.**

OLD VARNISH IN POOR CONDITION

1. It is impossible to achieve a really high quality varnish finish unless perished, weathered or brittle old coatings are completely removed. EPIGLASS HEAVY DUTY PAINT & VARNISH REMOVER is recommended for this purpose, followed by a scrubbing with fresh water and SEACLEAN then sanding, or scraping to bare timber. Pay particular attention to joints and crevices and remove all old filler or putty that may have been softened.
2. If badly stained, use EPIGLASS STAIN ADDITIVE or EPIGLASS TIMBERTONE. (See under 'New Work' on previous page.)
3. Sand with fine paper and dust off.
4. Apply at least three or four coats EPIVAR, MARINECOAT POLYURETHANE SPAR VARNISH, INDOTHANE GLOSS at 55-65 sq.ft./pint/coat.

CANVAS CANOES

New Canvas Canoes may be waterproofed and tautened by a generous application of EPIGLASS MARINECOAT UNDERWATER PRIMER UNDERCOAT. Allow to dry and harden for at least a week before proceeding. Sand off any rough places, taking care not to damage the Canvas, and apply one more coat of the same product. After drying overnight, complete protection and decoration with two coats of EPIGLASS MARINECOAT PLASTIC GLOSS. Protect and preserve the Wooden frame with EPIGLASS EVERDURE (see EVERDURE section).

Old Canvas Canoes in good condition should receive one coat of EPIGLASS MARINECOAT GLOSS. Unsound Canvas should be scrapped and the frame, if sound, recovered. Proceed as for New Canvas.

STEEL HULLS

The protection of steel hulls is a highly specialized technique, and we recommend that owners of steel craft contact our Technical Service Laboratory for an individual recommendation. General specifications are, however, given opp.

It is essential that the whole of the outside of the hull should be sandblasted to white metal before proceeding with any further treatment. Unless this procedure is followed, mill or welding scale will become detached in service, bringing with it the whole of the paint system. Subsequent rust will spread under the surrounding film and result in a major corrosion problem.

Another form of corrosion on Steel Hulls is electrolytic in origin. The commonest causes are:

1. The use of ordinary mild Steel which contains particles of uncombined Carbon, whereas Carten Steel does not.
2. Inefficient insulation of electrical equipment. Owners of Steel craft should obtain expert advice from equipment manufacturers before installation is carried out.
3. Insufficient protective film thickness between the Steel and a Copper Antifouling system. The mechanism of Antifouling is that the Copper is slowly leached out and the surface concentration is sufficient to kill the organisms as they settle.
If the Copper solution can come into contact with the Steel, electrolytic corrosion is set up. Pitting results, accompanied by the formation of gas bubbles which literally blow the paint system off.

For adequate insulation a layer of EPIGLASS NEOSEAL or EPITAR effectively prevents this from happening.

Non Copper Antifouling such as Epiglass Light Duty, do not give rise to electrolysis but are not quite as effective or as long lasting as the Copper types (EPIGLASS HEAVY DUTY, HI SPEED and PACIFIC).

EPIGLASS offer three paint systems for STEEL HULLS.

# EPIGLASS MARINE PAINT AND ANTIFOULING COLOUR CARD

EPIGLASS

# Above the waterline

## Ready-to-use Epiglass Marinecoat Plastic Gloss Finish

ADMIRAL GREY

DECK CREAM

GALLEON GOLD

JAMAICAN RED

LANDFALL GREEN

YOUNG NICK GOLD

SUNSET GOLD

TEAK

SOVEREIGN BLUE

SHELL

RESCUE ORANGE

CREST GREEN

FATHOM CREAM

GULF BLUE

MIDWATCH BLUE

OYSTER WHITE

SPINNAKER RED

STORM GREY

SQUALL BLUE

SIGNAL YELLOW

SEACREST

REEF GREEN

ALSO IN SURF WHITE, "FREE CHALKING" GENOA WHITE, METALLIC GOLD AND SILHOUETTE BLACK

## Examples of Marinecoat Blending

MERIDIAN GOLD
1 part Sunset Gold 1 part Surf White

FLARE
1 part Signal Yellow 1 part Surf White

FORECASTLE GREEN
2 parts Landfall Green 1 part Seacrest

PANDORA GOLD
1 part Crest Green 1 part Fathom Cream

SEA MIST
1 part Reef Green 8 parts Surf White

AURORA
2 parts Rescue Orange 1 part Jamaican Red

MANGROVE
1 part Landfall Green 1 part Fathom Cream

CASCADE
1 part Landfall Green 4 parts Surf White

SUNSET
3 parts Jamaican Red 1 part Signal Yellow

OCEAN DEEP
1 part Midwatch Blue 1 part Landfall Green

PINNACE
3 parts Sovereign Blue 1 part Signal Yellow

AQUA
1 part Reef Green 4 parts Surf White

SHEARWATER
2 parts Reef Green 1 part Sovereign Blue

SANDALWOOD
1 part Crest Green 1 part Shell

SAND
1 part Fathom Cream 1 part Surf White

TREASURE GOLD
1 part Young Nick Gold 4 parts Sunset Gold

MAHOGANY
2 parts Teak 1 part Jamaican Red

DRIFTWOOD
2 parts Crest Green 1 part Shell

SEASPRAY
1 part Storm Grey 2 parts Squall Blue

ZENITH GREEN
1 part Young Nick Gold 1 part Sovereign Blue

PAUA
1 part Midwatch Blue 1 part Silhouette Black

DOLPHIN
1 part Gulf Blue 1 part Shell

McCorquodale Process by Martin Printing Company, Napier 9.71

## Ready-to-use two-pot Epiglass Reaction Lacquer Polyurethane Plastic Finish

FLAME RED

FATHOM CREAM

BRITANNIA BLUE

GULF BLUE

RESCUE ORANGE

SUNSET GOLD

ARCTIC BLACK

HARBOUR GREEN

GALLEON GOLD

OLYMPIC BLUE

AZIMUTH CREAM

TIRI YELLOW

MARINA GREEN

DAWN GREY

SCHOONER GREEN

WHITE ALSO AVAILABLE

NUMEROUS OTHER COLOURS CAN BE OBTAINED BY BLENDING

## Non-Skid Deck Finish

STORM GREY

FATHOM CREAM

DECK CREAM

CREST GREEN

SEA SPRAY

SHELL

OFF-WHITE ALSO AVAILABLE

# Below the waterline

## Epiglass Heavy Duty Vinyl Plastic Antifouling

RACING RED

RACING BLUE

RACING GREEN

RACING BLUE AND RACING GREEN SHOW THE APPROXIMATE COLOUR AFTER ONE MONTH'S IMMERSION IN SALT WATER

## Epiglass Light Duty Vinyl Pastel Antifouling and Boot-Topping

RESCUE YELLOW

SEA GREEN

MINDANAO BLACK

MARLIN BLUE

DOLPHIN BLUE

SUNSET GOLD

NAVIGATOR RED

ALSO AVAILABLE IN SHARK WHITE

## Epiglass Pacific Antifouling

COPPER RED

## Epiglass Hi-Speed Copper Antifouling

HI-SPEED COPPER

(APPROXIMATE COLOUR AFTER 1 MONTH'S IMMERSION IN SALT WATER)

Export award winning Marine products

**EPIGLASS**

## Epiglass Engine Enamel

GREEN

RED

BLUE

GREY

ALSO AVAILABLE IN BLACK AND SILVER

The colours reproduced on this card are as close to the actual paint colours as modern printing processes will allow.

**For specifications and full technical data on all Epiglass Marine products refer to Epiglass Boat Owners' Manual.**

Consolidated Chemicals Ltd,
Cartwright Road, Glen Eden, Auckland.
Also at Wellington, Christchurch, Dunedin & Sydney.

SYSTEM A (Commercial vessels, barges, tugs, etc.)
1. Immediately after completion of sandblasting apply by brush one coat EPIGLASS EPITAR (mixed at equal volume with its hardener), thinned up to 10-20% with EPIGLASS UNIVERSAL THINNERS at a spreading rate 50-60 sq. ft./pint of mixed material. Allow to dry 12-24 hours.
2. Apply a further coat of the same material unthinned at 45-50 sq. ft./pint of mixed material. (These two coats will give a finished film thickness of 10-12 thou.)

TOPSIDES

If the original black colour of Epitar is acceptable, no further treatment is required.

If a white or coloured finish is required, follow the specification set out below:
1. Allow the Epitar film to cure overnight.
2. Sand lightly, apply one coat of EPITAR WHITE SEALER (mixed 2:1 by volume with its hardener), at 50-60 sq. ft./pint of mixed material. Allow to cure for 24 hours.
3. Sand lightly, making sure not to cut through the film. Dust off.
4. At 24 hour intervals apply two coats of MARINECOAT PLASTIC GLOSS FINISH at 70-75 sq. ft./pint/coat in selected colour.

UNDERWATER AREAS

Epiglass Heavy Duty Vinyl or Pacific Antifouling (2 coats at 35-40 sq. ft./pint/coat) can safely be applied direct to the cured EPITAR film. Spraying the first coat is advisable. Adhesion will be improved if light sanding or a good wash down with SEACLEAN precedes application of Antifouling. There will be some dulling of colour in service but this can be avoided by applying an intermediate coat of EPITAR WHITE SEALER COAT. This is strongly advised if EPIGLASS LIGHT DUTY VINYL (Pastel) is used.

DECKS

Decks should be treated with Epitar as above but sprinkle coarse sand or Epiglass Safe Deck onto the first coat whilst still wet. Allow to harden overnight, brush off excess and apply more Epitar. If a coloured deck is required decorate as for Topsides.

SYSTEM B

For steel-hulled pleasure craft where a perfect finish above and below the waterline is required the following procedure is recommended:
1. Immediately after completion of the sandblasting apply by brush one coat EPIGLASS EPOXY ZINC CHROMATE PRIMER (mixed 2:1 by volume with its hardener) at 55-60 sq.ft./pint of mixed material.
2. Allow to dry for 24 hours. Sand lightly. Dust off.
3. Apply by brush, roller, or spray one coat EPIGLASS EPOXY UNDERCOAT (mixed 2:1 by volume with its hardener) at 55-60 sq. ft./pint of mixed material.
4. Allow to cure for 24 hours. Sand lightly and dust off.

5. Using a wide "Doctor-blade" apply a heavy coat of EPIGLASS WHITE EPIFILL or EPIGLASS FAIRING FILLER (mixed at 2:1 by volume with their respective Hardeners). This will serve to fair the irregularities.
6. Allow to cure overnight. Sand thoroughly, taking care not to cut through the zinc chromate coating and expose the steel. If necessary, apply more EPIFILL or EPIGLASS FAIRING FILLER to any hollows remaining.
7. Allow 24 hours for curing. Sand smooth and dust off.
8. Apply a further coat of EPIGLASS EPOXY UNDERCOAT (mixed 2:1 by volume with its hardener), at 55/60 sq. ft./pint of mixed material.
9. Allow to cure. Sand lightly, dust off.

PROCEED TO FINISH AS FOLLOWS:
ABOVE THE WATER LINE

Apply two full coats MARINECOAT PLASTIC GLOSS FINISH at 70-75 sq. ft./pint/coat in selected colour, with overnight drying in between coats.

BELOW THE WATER LINE

Apply two full coats EPIGLASS Heavy Duty or Light Duty VINYL ANTIFOULING, or EPIGLASS HI-SPEED ANTI-FOULING or PACIFIC ANTIFOULING at 35-40 sq. ft./pint/coat, with 3 to 4 hours drying between coats. If spraying apply wet-on-wet.

SYSTEM C

Alternative specification suitable for both pleasure craft and commercial vessels.

Immediately after completion of the sandblasting apply by brush or spray four coats of NEOSEAL at 50 sq. ft./pint/coat, at 8-16 hour intervals. The NEOSEAL system should be allowed to harden for as long as possible. The minimum time should be 24 hours but best results are attained if this period is extended up to one week.

ABOVE THE WATER LINE
1. Apply by brush, roller or spray two coats MARINECOAT UNDERCOAT SURFACER at 65-70 sq. ft./pint/coat. Allow overnight drying between coats. Sand smooth and dust off.
2. Apply two coats MARINECOAT PLASTIC GLOSS FINISH at 70-75 sq. ft./pint/coat in selected colour, allowing overnight drying between coats.

BELOW THE WATER LINE

Apply two coats EPIGLASS Heavy Duty or Light Duty VINYL ANTIFOULING, or EPIGLASS HI-SPEED COPPER ANTIFOULING or PACIFIC ANTIFOULING, allowing 3 to 4 hours between coats.

DECKS

Best results on decks will be obtained if these, too, are sandblasted, although it is not as necessary as on the outside of the hull. As an alternative, power-wire brushing of the decks will usually remove most of the scale and rust.
1. Having removed as much of the rust as possible treat the deck area with EPIGLASS ETCH PRIMER (mixed in equal parts with its Activator.) Minimum coverage 125 sq. ft./pint of mixed material.
2. After no less than 2, and preferably no more than 24 hours apply a generous brush or roller coating of EPIGLASS 90 RESIN (mixed 2:1 by volume with its hardener). Whilst the coating is still wet sprinkle on an excess of 44 grit Silica Sand or EPIGLASS SAFE DECK. Allow to cure overnight and brush off the excess.
3. Apply a further coat EPIGLASS 90 RAPID (mixed 2:1 by volume with its hardener). Allow to cure for 24 hours. If desired this second coat may be tinted to Stone, Grey, Light Green, or Buff with Universal Stainers. Alternatively, use 90 RAPID WHITE and finish in EPIGLASS REACTION LACQUER or MARINECOAT PLASTIC GLOSS FINISH. If a heavy non skid texture is not required, follow the Etch Primer with EPIGLASS EPOXY ZINC CHROMATE (see Hull System B) when this has hardened apply at least one coat each of MARINECOAT UNDERCOAT SURFACER and Gloss and finish with 2 coats of MARINECOAT NON-SKID DECK PAINT (see under decks Wooden Hulls).

SUPERSTRUCTURES
1. Power wire brush. Dust off.
2. Apply two coats MARINECOAT ZINC CHROMATE PRIMER at 65-70 sq. ft./pint/coat. Allow overnight drying between coats.
3. Leave the second coat to dry for at least 24 hours and proceed with the application of MARINECOAT UNDERCOAT SURFACER at

65-70 sq. ft/pint. It is probable that at least two coats will be required on wire brushed steel. Leave this second coating to dry for 24-48 hours.
4. Wet sand, dust off and apply two coats MARINECOAT PLASTIC GLOSS FINISH at 70-75 sq. ft./pint/coat in selected colour, allowing overnight drying between coats.

### INSIDE CABIN AREAS, ENGINE ROOM

Use same system as recommended for "Superstructure".

### BILGES, FORE AND AFT PEAKS, CHAIN LOCKERS, etc.

1. Wire brush or chip off and clean thoroughly.
2. Apply two coats EPIGLASS EPITAR at 40-50 sq.ft./pint/coat. Allow 12-24 hours for drying between coats. Alternatively, use EPIGLASS RUST BIND OIL. (See p. 34.)

### STEEL KEELS, RUDDERS, etc.

These should be treated according to any of the 'Below Water Line' systems given previously for Steel Hulls. Do not precoat with Zinc Metal Spray, Hot Galvanising or any similar process. Under immersed conditions these invariably lead to shedding of the whole system due to galvanic action.

### ALUMINIUM HULLS AND DINGHIES

Although aluminium dinghies used in freshwater areas may safely be left untreated, aluminium hulls exposed to salt water conditions will have a longer carefree life if treated in the following way:

Electrolytic corrosion problems can be even more serious on Alloy or Light Alloy Hulls and equipment than on Steel (refer to previous section). Make sure that all electrical equipment has been adequately insulated.

### NEW ALUMINIUM CRAFT

(Also Light Alloy Outboard Motors, Stern Drives, etc. Aluminium Motors and Spares.)

1. Take great care to remove all grease, corrosion, etc. A good scrub down with EPIGLASS RUST KILLER diluted three to one with warm water, followed by a thorough hosing, is the best treatment. Drain as dry as possible, but if mopping is necessary, make sure that no grease is re-introduced from the mop.
2. Apply one **thin** spray or brush coat EPIGLASS ETCH PRIMER (mixed at 1:1 by volume with its Activator). A spreading rate of **at least** 125 sq. ft./pint of mixed material is required. Thick films will not cure properly, and will give rise to subsequent peeling.
3. Two to 24 hours later, apply by brush or spray, a full coat of EPIGLASS REACTION LACQUER (mixed at 2:1 by volume with its hardener) at 65-70 sq. ft./pint of mixed material. For brushing add up to 10% of EPIGLASS UNIVERSAL THINNERS. Use EPIGLASS SPRAYING THINNERS if spraying.
4. Apply at least one more coat of the same material. If a spray gun is available use a wet-on-wet technique. If a brush is used, wait 4-12 hours between coats.
5. For a superlative finish, allow to dry for at least 48 hours, cut the REACTION LACQUER finish with 400-600 wet paper, and polish with EPIGLASS SHOWBOAT.

NOTE:

Aluminium hulls that are moored, require antifouling compositions and should be treated as recommended from 1-4 above. Instead of polishing as in 5, however, sand carefully with 280-320 wet paper, wipe down with a cloth dampened with EPIGLASS UNIVERSAL THINNERS, and apply two coats of EPIGLASS LIGHT DUTY VINYL ANTIFOULING.

**DO NOT USE ANY ANTIFOULINGS CONTAINING COPPER OR GRAPHITE AS THESE WILL LEAD TO SERIOUS CORROSION.**

### PREVIOUSLY PAINTED ALUMINIUM CRAFT IN POOR CONDITION

1. Clean down to bare metal. Strip old paint with EPIGLASS HEAVY DUTY PAINT & VARNISH REMOVER. Take great care to remove all traces of Paint Remover by scrubbing thoroughly with copious quantities of fresh water and EPIGLASS SEACLEAN.
2. Then treat as for 'New Hull'.

### LARGER CRAFT BUILT OF ALUMINIUM OR ALUMINIUM ALLOYS

Specifications are available from our Technical Service Laboratory on request. Please supply full details.

### FIBREGLASS HULLS

Wholly fibreglass hulls are composed of glass mat and Polyester Resin. When new they are protected with a coloured gel-coat and no painting is called for. After long service, however, it becomes necessary to redecorate.

### ABOVE THE WATER LINE

1. Sand all worn areas to a clean, sound, non-glossy surface.
2. Make good any minor structural damage with materials contained in

*The current World O.K. Champion, Kent Carlson, racing off Rangitoto during the 1971 World Series.*

*YOUNG NICK, built by Brin Wilson. Finished above the waterline with Epiglass Marinecoat Young Nick Gold, and below the waterline with Epiglass Hi-Speed Copper Antifouling.*

the EPIGLASS FIBREGLASS REPAIR KIT. If major damage has to be repaired, consult our Service Laboratory.
3. Any chipped or minor surface damage should be filled with EPIGLASS EPIFILL or FLASH-FIX. Allow to harden, sand smooth and dust off.
4. Surface the hull by applying one or more coats of REACTION LACQUER UNDERCOAT (mixed at 2:1 by volume with its hardener) at 65-70 sq. ft./pint/coat of mixed material. Application by brush will require the addition of up to 10% EPIGLASS UNIVERSAL THINNERS, and it is essential to lay on a thick coat and leave it. Setting is fast, and the normal "crossing" technique will lead to dry edges and a rough surface. If a spray gun is available, add up to 10% EPIGLASS SPRAYING THINNERS and apply by the wet-on-wet technique.
After 4-24 hours drying, wet sand to a smooth fine surface with at least 240 grit paper. Finish with 400 grit paper.
5. Finish with at least two full coats of EPIGLASS REACTION LACQUER (mixed at 2:1 by volume with its hardener) at 70-75 sq. ft./pint/coat of mixed material, in selected colour. Up to 15% of EPIGLASS UNIVERSAL THINNERS or EPIGLASS SPRAYING THINNERS may be added. If brushing, again lay on a heavy coat and do not attempt to cross it afterwards. Brush from the new area towards the old **and never in the reverse direction.**

Spray applications should preferably be wet-on-wet. To regain the original finish that was on the boat when new, allow to harden for at least four days, wet sand with 600 paper and polish with EPIGLASS SHOWBOAT Polish.

## IN THE EVENT OF DAMAGE EARLY IN THE LIFE OF THE HULL

1. Trim up the damaged area, taking great care to remove any traces of parting agent which may have been conveyed from the original mould.
2. Patch the hole using fibreglass cloth or chopped strand mat and EPIGLASS 90 RESIN as contained in the EPIGLASS FIBREGLASS REPAIR KIT. Allow to harden and sand smooth.
3. Fill any surface imperfections with EPIGLASS EPIFILL or FLASH-FIX, sand smooth and dust off.
4. Touch up with EPIGLASS REACTION LACQUER as above.

## BELOW THE WATER LINE

Fibreglass hulls that are left on moorings should be treated below the waterline with EPIGLASS Heavy Duty, Light Duty or High Speed VINYL ANTIFOULING, or PACIFIC ANTIFOULING.

### New Fibreglass Hulls

1. Wet sand with 280-320 paper to remove all traces of parting agents which may have been carried from the original mould and also to leave a matt surface.
2. Wipe down with a rag moistened with EPIGLASS UNIVERSAL THINNERS, and follow with one coat (brushed or sprayed) EPIGLASS ETCH PRIMER (mixed 1:1 by volume with its Activator).
3. After 2 hours, and not more than 24 hours, apply two full coats EPIGLASS Heavy Duty, Light Duty or High Speed VINYL ANTIFOULING, or PACIFIC ANTIFOULING at 35-40 sq. ft./pint/coat.

As an alternative to the above treatment, moor the boat for at least 14 days. You will find that over this period, marine organisms will have removed all traces of parting agents and dulled the surface sufficiently to receive Antifouling. A good scrub down followed by rinsing in fresh water and you can go right ahead with your EPIGLASS Antifouling as under (3) above.

### Old Fibreglass Hulls

1. Remove all marine growth and wash off thoroughly.
2. Apply 2 full coats EPIGLASS Heavy Duty, Light Duty or High Speed VINYL ANTIFOULING, or PACIFIC ANTIFOULING at 35-40 sq. ft./pint/coat.

## PLYWOOD WATER AND FUEL TANKS

For wooden craft, the most satisfactory way of making water tanks is to use Marine Ply with all joints secured and waterproofed with EPIGLUE. A small fillet of EPIFILL applied to the inside corners so as to radius them to approximately ¼" should follow completion of manufacture. The lid should be detachable and have a substantial wooden beading round the top edge of the tank. After careful sanding and smoothing of the inside, the whole surface including the underside of the lid should be lined, using EPIGLASS 90 RESIN and EPIGLASS CATALYST D.T. with Dynel. A double thickness of cloth should be laid in the corners. The general process is exactly the same as laid down in the "Sheathing" section in this manual but the application material is an 8:1

*WYRALLAH II, 36' cruising launch, glued with Epiglass 521.*

by volume mixture. The pot life of this mixture is rather shorter than that of EPIGLASS 90 RESIN and 90 HARDENER. In view of this no more should be mixed than can be used within 10 minutes and the material should be poured into a shallow tray immediately after mixing. At least three more generous coats, allowing 2-24 hours between, should be applied to the surface of the Dynel coating after light sanding. A period of several days should be left for full cure of the inside. The tank should then be well scrubbed, using plenty of EPIGLASS SEACLEAN and warm water. After rinsing thoroughly, it is advisable to fill the tank with water, allow it to stand for several days and drain it again. If this is repeated at least once more there will be no traces of any foreign taint to the water, and the tank itself will last the life of the boat hull. Outet pipes are best fitted as an inside flanged joint using EPIGLASS 90 RESIN and chopped strand mat as a gasket. The same material should be used under the lid when it is eventually secured. Pressure should be applied whilst the resin is still uncured. Extra rigidity can be given to pipes by lashing with Dynel tape well saturated with EPIGLASS 90 RESIN to form a solid cone on the outside of the tank with the Unions completely enclosed. This overcomes any sideways strain.

It is best to build the tank into the Hull and to associate it with long bed members as an integral part. Fuel tanks should be constructed in the same general way except that provision **must** be made for earthing the contents. Non conductors of electricity such as Petrol and Diesel can build up a considerable static electrical charge by surging whilst the boat is rolling. There can, then, be a danger of explosion if this is allowed to discharge to a metal object. By using a metal exit pipe and making sure that this is earthed to the engine bed, any charges are dissipated as they form and spark dangers are eliminated.

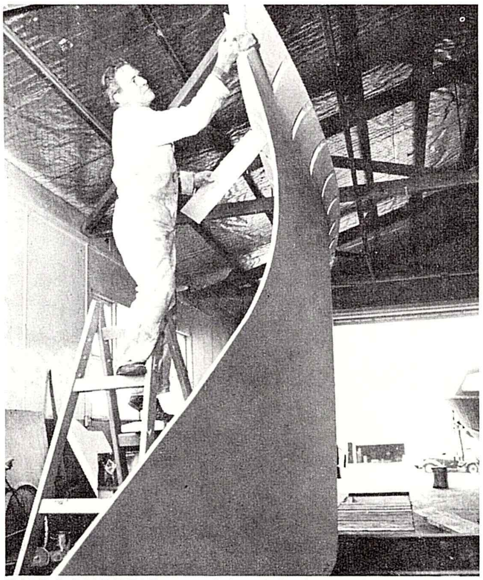
### STEEL TANKS

For the treatment of steel tanks refer to our Technical Service Laboratory for a specification. Please give as many details as possible when writing or calling.

### HIGH SPEED CRAFT
### (Wooden, Plywood and Moulded Ply)

For centre-board yachts, trailerboats, fin keelers and similar craft, EPIGLASS REACTION LACQUER is the ideal surface coating where an extremely fast, hard surface is required. The hardened glossy film withstands immersion for long periods without danger of swelling, softening or blistering.

1. On bare wooden hulls sand smooth, stop up with EPIGLASS EPIFILL or FLASHFIX, again sand, dust off.
2. Apply one coat EPIGLASS REACTION LACQUER PRIMER (mixed 2:1 by volume with its hardener) at 70-75 sq. ft./pint of mixed material. Brush application is best, but not essential. Allow to dry for 1-2 hours.
3. Apply two or more coats EPIGLASS REACTION LAQUER UNDERCOAT (mixed 2:1 by volume with its hardener) at 65-70 sq. ft./pint/coat of mixed material. Allow to dry at least 4 hours between coats, sand smooth and dust off. Spray application with the addition of 10% EPIGLASS SPRAYING THINNERS is best, but good results can be obtained with a brush.
4. Apply at least two coats EPIGLASS REACTION LACQUER (mixed 2:1 by volume with its hardener) at 70-75 sq. ft./pint/coat of mixed material. Spray application (wet-on-wet) is best, but brushing is satisfactory. For a superlative finish allow to dry for at least 48 hours, flat wet with 400 or 600 paper and polish with EPIGLASS SHOWBOAT POLISH.



*BUCCANEER'S steel keel being faired and filled, prior to painting, by Jim Wallace of Chemical Applications Ltd.*

### NEW CONCRETE
### (FERRO CEMENT) HULLS

#### GENERAL

Ferro Cement Hulls are ideal subjects for the use of EPIGLASS EPOXY RESIN coatings and fillers. No other type of product is suitable, owing to the alkalinity of the Concrete.

Failures have occured in the past, even after using Epoxy materials but they have been brought about by a lack of appreciation of the problems involved.

In many cases the freshly cured Hull has been painted on the outside and then left exposed to the weather with no provision for escape of accumulated rainwater. Considerable hydrostatic pressure has built up and the outside coating has failed.

In certain other cases, insufficient attention has been paid to the "tucking in" of wire ties. The result has been that the ends have been left exposed and have corroded to form small craters all over the Hull. These can occur progressively over a considerable period and, in consequence, hold up painting.

Great care should be taken to ensure that there are no projecting wire ends before plastering commences. Any craters which do form should be cut out, the wire well hammered down and the hole made good with EPIGLASS EPIFILL or EPIGLASS FAIRING FILLER.

Any extensive repairs or additions to the plaster should make use of EPIGLASS CONCRETE TIE COAT (details on this product are available on request from our Technical Service Department).

When applying any filler or surface coating to Concrete, it must be borne in mind that the adhesion is no better than the "peel resistance" of individual grains of Sand. Shear strengths of 500-600 p.s.i. can still be attained and these are ample under practical conditions, but they do not compare with the 2,000 p.s.i. figures for Wood to Wood or Wood to Metal Joints when using EPIGLASS EPIGLUE (see under Glues earlier in this Manual).

With the above qualification, EPIGLASS EPIGLUE and EPIFILL should be used for fixing and jointing Timber fixtures to the inside of the Hull.

Though carelessness or bad workmanship will inevitably lead to very serious problems, we are confident that careful observance of all details of the above remarks and of the following specifications will give uniformly excellent results.

#### INTERIOR

1. Clean out all dust, dirt, laitance, etc.
2. Make sure that the surface is

dry and free from loose particles.
3. Seal with a mixture of:
EPIGLASS 90 RAPID RESIN 2 parts
EPIGLASS 90 RAPID HARDENER 1 part
EPIGLASS UNIVERSAL THINNERS up to 1 part.
Apply generously at a spreading rate of 500 sq. ft. per gallon of mixed material. Use a brush or roller and make sure that the surface is well wetted, paying particular attention to all crevices, corners, etc. EPIGLASS 65 RESIN and its Hardener may be used in place of 90 RAPID if desired.
4. Proceed with fitting out in the usual manner. EPIGLASS EPIGLUE and EPIGLASS EPIFILL will adhere well to the cured 90 RAPID film. The Marinecoat system can be used for decoration if desired, as the sealing Resin coat will effectively prevent any alkali attack.

### EXTERIOR

1. Ultra fine particles, generally referred to as laitance, may have been brought to the surface during plastering. They will reduce adhesion of any applied coating and so must be removed before proceeding. On massive Concrete structures, EPIGLASS CONCRETE ETCH SOLUTION is used, but on a Ferro Cement Hull, this is too aggressive and must not be used. EPIGLASS RUST KILLER diluted with three times its volume of fresh water and applied at the rate of half to one pint per square yard is safe and effective for the purpose. As soon as frothing has ceased, hose down very thoroughly and allow to dry.

**NOTE:**

EPIGLASS RUST KILLER is acid and goggles and gloves should be worn. Avoid splashing the skin.
Inspect the surface very carefully for corrosion craters, dig them out and punch the exposed wire well in.
2. Apply one or two coats of EPIGLASS EPOXY UNDERCOAT (mixed at 2:1 by volume with its Hardener) at 50 sq. ft. per pint of mixed material per coat. Allow 4-24 hours between coats.
Application can be by brush or roller but, prefarably, not by spray since thorough penetration of corners and crevices is essential.
3. Allow the coating to dry and fair up the surface with EPIGLASS FAIRING FILLER or EPIFILL (mixed at 2:1 by volume with their respective Hardeners). Pay particular attention to corrosion craters.
4. Allow the filler to harden and sand smooth. Apply further filler if required.
5. At this stage you can sheath the Hull with EPIGLASS EPOXY RESIN or proceed immediately with painting. Sheathing will yield a protective skin which will certainly minimise maintenance and reduce the danger of mechanical damage. It is strongly recommended. Use Dynel or Glass Cloth according to the instructions in the Sheathing Section of this Manual.
6. Proceed to finish, both above and below the waterline, as detailed earlier for Wooden Hulls.

### OLD CONCRETE HULLS

If the system is sound and in good order, repaint as for Wooden Hulls. If the system is unsound and peeling and/or corrosion has occurred, sand blast to bare plaster and proceed as for a new Hull.

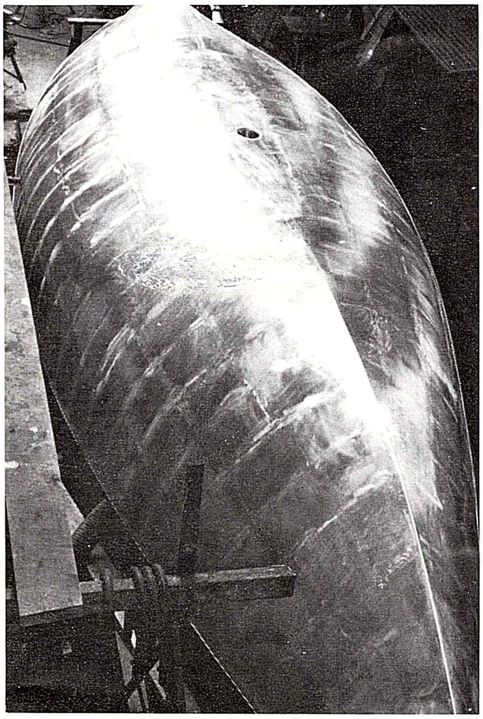
In the event of minor damage to a Concrete Hull, temporary repairs underwater can be carried out with EPIGLASS UNDERWATER EPOXY GROUT. Mix equal parts of Grout and Hardener and apply with the gloved hand or a trowel. The mixture will harden and cure underwater, but should be removed down to bare Plaster before carrying out permanent repairs. Always carry a pack of EPIGLASS UNDERWATER EPOXY GROUT in your Emergency Kit.

*Well designed and beautifully finished with Epiglass systems – John Lidgard's RUNAWAY.*

# Priming

There is a wide range of Epiglass products to help you with your particular priming job. The following list shows you basically which product to use where, and is followed by information on each product with usage data.

Wood (Above Waterline)
MARINECOAT TUNG OIL RED LEAD
MARINE WHITE TIMBER PRESERVATIVE
REACTION LACQUER PRIMER
Wood (Below Waterline)
MARINECOAT UNDERWATER PRIMER UNDERCOAT
Steel (Above Waterline)
MARINECOAT TUNG OIL RED LEAD
MARINECOAT ZINC CHROMATE PRIMER
EPOXY ZINC CHROMATE PRIMER
ETCH PRIMER
NEOSEAL
EPITAR
Steel (Below Waterline)
NEOSEAL
EPITAR
Aluminium & Light Alloy
ETCH PRIMER
Structural Steel
NEOSEAL
EPITAR
Galvanised Iron, etc.
EPITAR
EPIPRIME
ETCH PRIMER
Concrete
EPIGLASS EPOXY UNDERCOAT
EPITAR



*WAI-ANIWA (built by Steel Yachts & Launches) cleaned down in readiness for the first Epiglass priming undercoat.*

# EPIGLASS MARINECOAT TUNG OIL RED LEAD PRESERVATIVE PRIMER.

This is a unique marine primer equally suitable for timber or metal. On timber the specially manufactured medium combines high penetrative properties with excellent pore filling. The blend of Pigments ensures dense packing for maximum water resistance on timber and high corrosion inhibiting properties when used on metal. In addition, an organic preservative is incorporated to prevent the growth of mould. Lurking dry rot spores on the surface of the timber are effectively disposed of.

| | |
|---|---|
| Coverage: | 65-70 sq. ft./pint |
| Drying Time: | 4 hours |
| Recoating: | Following overnight drying |
| Application: | Brushing is recommended |
| Thinning: | Not normally necessary but ease with Marinecoat Retarder Thinners in hot weather |
| Clean up: | Mineral Turpentine |

# Epiglass Marinecoat White Timber Preservative

Contains a balanced blend of fungicides comprising Pentachlorophenol, Tributylin Oxide, Copper Naphthenate and Barium Mataborate in a special medium. It combines deep penetration and spore killing with surface sealing and preservation. Marinecoat White Timber Preservative may be used on **all timber prior to painting.** It will not only effectively preserve the timber under the paintwork, but also make additional primers or undercoats unnecessary in some cases. On non-critical areas, when a quick job is required, the finishing coat may be applied directly to the Preservative.

| | |
|---|---|
| Coverage: | 65-70 sq. ft./pint |
| Drying Time: | 4 hours |
| Recoating: | Following overnight drying |
| Application: | Brushing recommended: |
| Thinning: | Not advisable except for spraying where 10-20% Mineral Turpentine or EPIGLASS SPRAYING THINNERS can be added. In hot weather, brushing may be eased by the addition of up to 5% of MARINECOAT RETARDER THINNERS. |

# Epiglass Reaction Lacquer Primer

See Reaction Lacquer Section.

# Epiglass Marinecoat Underwater Primer Undercoat

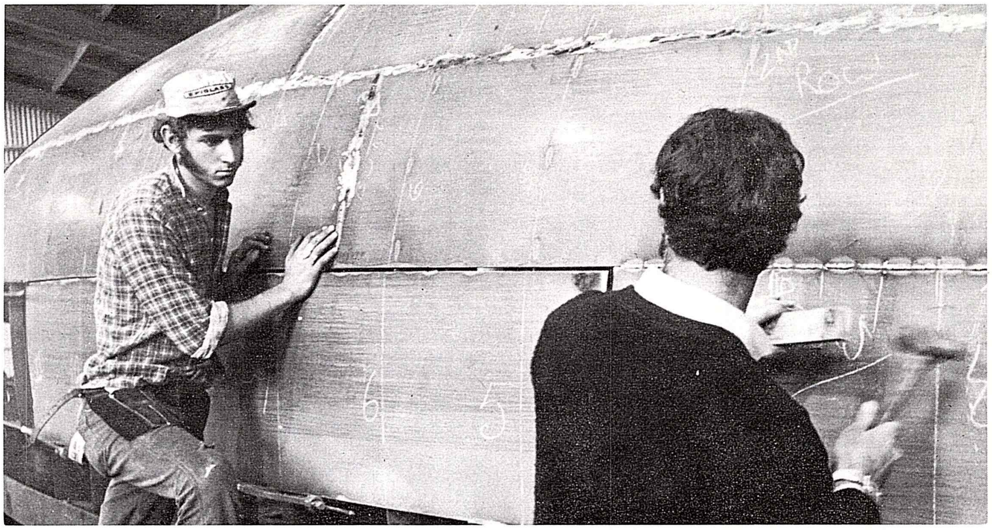
The perfect Hull Primer for use on wooden craft below the waterline is EPIGLASS MARINECOAT UNDERWATER PRIMER UNDERCOAT developed as a result of painstaking research over a long period. It is completely impervious to water, and yet unlike other products for which similar claims are made, it brushes or sprays easily and can be overcoated with the EPIGLASS MARINECOAT or EPIGLASS ANTIFOULING ranges without danger of lifting or bleeding. Though designed for continuously immersed conditions, it can also be used on top-sides if desired.

| | |
|---|---|
| Coverage: | 65-70 sq. ft./pint |
| Drying Time: | 3-4 hours |
| Recoating: | After 16-24 hours |
| Application: | Brush for the first coat. Spray, Roller or Brush for subsequent coats |
| Thinning: | Not required except for spraying when up to 10% Mineral Turps or EPIGLASS SPRAYING THINNERS can be added. In hot weather slight easing with MARINECOAT RETARDER THINNERS is permissible when applying by brush. |

# Epiglass Etch Primer

Is a two-pack primer which is mixed before use at 1:1 by volume with its Activator. It has been designed for use on **freshly sandblasted steel or other clean metal surfaces.** Unlike other primers it is essential to apply a **very** thin coat. The dry film thickness should be no more than 0.0005 ins. (Half a thou!) Thick films do not cure and are useless. Normal ideas of opacity must be revised – it is no more than a 'Wash'. In spite of this, it forms the ideal anchorage for subsequent coats on steel, aluminium, brass and copper alloys. EPIGLASS ETCH PRIMER should always be overcoated after 2-24 hours and must not be left unprotected under outside conditions for longer periods. EPIGLASS ETCH PRIMER is the ideal preparation for Galvanised Stanchions, etc. and will effectively hold the subsequently applied paint system.

| | |
|---|---|
| Coverage: | Not less than 125 sq. ft./pint of mixed material |
| Drying Time: | ½-2 hours |
| No. of Coats: | One only |
| Recoating: | Not less than 2 nor more than 24 hours |
| Application: | Spray or Brush |
| Thinning: | Not necessary |
| Clean up: | Methylated Spirits |



*The construction of an all aluminium keeler, prior to painting and finishing.*

# Epiglass Epi-Prime

Is a water-thinned Acrylic Resin based Anti-Corrosive Primer suitable for application to **Iron, Steel, Old or New Galvanised Iron,** etc. EPIGLASS EPI-PRIME contains rust-inhibiting chemicals and may safely be used on damp surfaces. EPI-PRIME dries fast and can be overcoated, after overnight drying, with EPIGLASS MARINECOAT. EPIGLASS EPI-PRIME is non-inflammable and non-toxic. EPI-PRIME is ready-to-use for brush or roller but may be thinned with up to 5% of clean water before use with a spraygun. **Epi-prime is not recommended for use under conditions of severe Marine exposure.**

| | |
|---|---|
| **Coverage:** | 67-75 sq. ft./pint |
| **No. of coats:** | 1 or 2 as required |
| **Drying Time:** | 2 hours |
| **Recoating:** | Overnight |
| **Application:** | Brush, roller or spray |
| **Thinning:** | Not normally necessary but up to 5% clean water may be added for spraying. |
| **Clean up:** | Water |

# Epiglass Marinecoat Zinc Chromate Primer

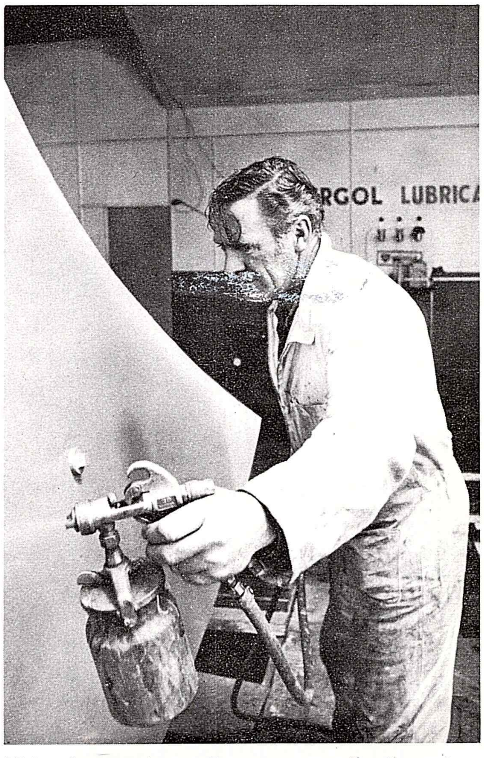
An excellent corrosion inhibiting primer for use above the waterline on steel hulls is MARINECOAT ZINC CHROMATE PRIMER. It dries overnight to form a really efficient rust barrier. EPIGLASS MARINECOAT ZINC CHROMATE PRIMER should preferably be applied over EPIGLASS ETCH PRIMER after sand blasting, but on non-critical surfaces power wire brushing is sufficient preparation.

| | |
|---|---|
| Coverage: | 65-70 sq. ft./pint |
| Number of coats: | Minimum of 2 desirable |
| Drying Time: | Overnight |
| Application: | Preferably brush for the first coat. Spray, roller or brush for subsequent coats |
| Recoating: | After overnight drying |
| Thinning: | Not normally necessary for brushing but in hot weather up to 5% of MARINECOAT RETARDER THINNERS is permissible. Add up to 10% Mineral Turps or EPIGLASS SPRAYING THINNERS for Spraying |
| Clean up: | Mineral Turps |

# Epiglass Neoseal

Forms an impervious barrier on steel or aluminium hulls above or below the waterline. It is based on a combination of Chlorinated Natural Rubber and Synthetic Elastomers and is pigmented with a special combination of Aluminium and Corrosion inhibiting Pigments.

| | |
|---|---|
| **Coverage:** | 45-50 sq. ft./pint |
| **No. of Coats:** | Four as a minimum |
| **Drying Time:** | 4 hours |
| **Application:** | Brush for the first coat. Spray, roller or brush for subsequent coats. |
| Recoating: | Up to 2 coats per day in fine summer weather, but leave the completed system to harden before applying MARINECOAT PLASTIC GLOSS or EPIGLASS ANTI-FOULINGS. Best results follow a period of up to a week but 24-28 hours is permissible in cases of urgency. |
| Thinning: | EPIGLASS UNIVERSAL THINNERS up to 10% if required. |
| Clean up: | EPIGLASS UNIVERSAL THINNERS or EPIGLASS CLEANING FLUID |



*This picture shows the spray application of Neoseal Anti-corrosive Primer.*

## Epiglass Epitar

Is a revolutionary new type of protective coating for use under exceptionally difficult and severe operating conditions. An anti-corrosive coating is only as good as its film thickness. Coatings capable of providing the necessary resistance to chemical attack often fail if insufficient thickness of film is provided at edges or peaks in the metal resulting from previous corrosion or heavy sandblasting. By the skilful combination of one of the oldest known compositions – Coal Tar Pitch – and one of the newest and most promising Resins developed during recent years – Epoxy – a thick, tough, strong and tenacious coating is obtained, capable of providing a dry film thickness of at least 0.010″ in two coats, equivalent to at least 7 coats of normal paint.

EPITAR has an outstanding resistance to chemical attack and will resist acid or alkali, full scale immersion, fumes and splashes, sea water, sour crude oil, petrol, diesel oil, sewage, brine solution, etc. to an extent not previously possible except from stoved coatings. Its use is therefore indicated on steel hulls as well as pipe lines, oil and petrol storage tanks, coke oven equipment, etc. EPITAR is equally suitable for application to clean concrete or metal surfaces.

| | |
|---|---|
| Coverage: | 50-55 sq. ft. per pint of mixture |
| Mixing proportion: | 1:1 by volume |
| No. of coats: | 2 or more |
| Recoating: | Not less than 12 nor more than 72 hours |
| Application: | Brush or spray |
| Thinning: | Up to 10% Universal Thinners |
| Clean up: | EPIGLASS CLEANING FLUID |

## EPIGLASS EPOXY ZINC CHROMATE PRIMER

Should be the first coat on sand blasted Steel Hulls of Pleasure Craft where extensive fairing is to be carried out. Impervious to water, has a high build, resists corrosion and forms an excellent anchor for EPIFILL (see Steel Hulls System, page 18).

| | |
|---|---|
| Coverage: | 55-60 sq. ft./pint of mixed material |
| Mixing Proportions: | 2:1 by volume |
| Mixed Pot Life: | 2-3 hours |
| No. of coats: | Normally only one |
| Recoating: | Overnight |
| Application: | Brush |
| Thinning: | Thinning should be avoided |
| Clean up: | EPIGLASS CLEANING FLUID |

## Epiglass 2-Pot Epoxy Undercoat

Is the primer for use on concrete hulls before filling and fairing with EPIFILL or EPIGLASS FAIRING FILLER. Use this product also as a guide coat over EPOXY ZINC CHROMATE PRIMER.

| | |
|---|---|
| Mixing: | 2:1 by volume with its Hardener |
| Coverage: | 65-70 sq. ft./pint of mixed material |
| Pot Life: | 1-2 hours |
| Dust Free: | 1-2 hours |
| Sand: | After overnight drying |
| Application: | Spray, roller or brush |
| Thinning: | Up to 10% EPIGLASS UNIVERSAL or SPRAYING THINNERS |
| Clean up: | Epiglass Cleaning Fluid |

# Undercoating

Also see Section 11, page 31.
UNDERWATER PRIMER
UNDERCOAT Section 12, page 33.
REACTION LACQUER UNDERCOAT

## MARINECOAT UNDERCOAT SURFACER

Ideal for use on primed plywood, timber, concrete, steel or fibreglass which is to be subjected to fresh and/or salt water conditions and exposure, **but not to be used on immersed areas.** The binder used is a hard, yet resilient synthetic resin. It is combined with pigments which have been jet refined in order to reduce them to Micron size. These properties ensure that the sandpaper will produce a truly perfect finish without clogging. N.B. if the finishing coat is coloured, up to 10% of the finishing colour can be added to the final coat of UNDERCOAT SURFACER if desired.

| | |
|---|---|
| Coverage: | 65-70 sq. ft. pint/coat |
| Drying Time: | 4 hours |
| No. of coats: | Minimum of 2 or more if necessary |
| Recoating: | After sanding, multiple coat applications are best left overnight for final hardening before finishing (see "Sinking" under Common Paint Faults, page 36.) |
| Application: | Brush, spray or roller |
| Thinning: | Not normally necessary for brush or roller, but in hot weather slight easing with MARINECOAT RETARDER THINNERS is allowable. For spraying, add up to 10% EPIGLASS UNIVERSAL or SPRAYING THINNERS or Mineral Turps. |
| Clean up: | Any EPIGLASS THINNERS or Mineral Turps |

## EPIGLASS EPITAR WHITE SEALER COAT

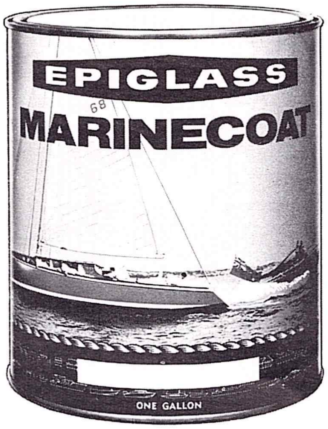
EPITAR WHITE SEALER COAT is an Epoxy Resin based White coating that effectively prevents bleeding of EPITAR films. Always use EPITAR WHITE SEALER COAT before attempting to apply MARINECOAT PLASTIC GLOSS FINISH over EPITAR.

| | |
|---|---|
| Coverage: | 65-70 sq. ft./pint of mixed material |
| Mixing: | 2:1 by volume with its hardener |
| No. of coats: | One |
| Recoating: | 24-48 hours by brush<br>1-2 hours by spray |
| Application: | Brush, roller or spray |
| Sand: | After overnight drying |
| Thinning: | Not normally necessary but slight easing with EPIGLASS UNIVERSAL THINNERS is admissible especially for spraying |
| Clean up: | EPIGLASS CLEANING FLUID |

# Marinecoat Finishes

Over the past few years acrylic resins have earned a high reputation in the latex and automotive fields.

Now in the marine finish field, Epiglass Chemists have scored a major breakthrough by developing an acrylic-fortified plastic gloss finish – MARINECOAT. MARINECOAT is a superior finish in that it gives easier brushing, faster drying, more sparkling gloss, longer gloss retention, greater durability and greater flexibility . . . which all add up to even lower maintenance costs.



*YOUNG NICK, built of Kauri and designed by Sparkman & Stephens. Finished above the waterline with Epiglass Marinecoat Young Nick Gold, and below the waterline with Epiglass Hi-Speed Copper Antifouling.*

## EPIGLASS MARINECOAT PLASTIC GLOSS FINISH

Is especially formulated for use on top sides to give a sparkling durable finish which will withstand sun, wind and salt spray. It is NOT intended to be subjected to continuous immersion. No one-pot air-drying finish is suitable for such conditions. Below the waterline, or on the Boot-top you should use EPIGLASS VINYL ANTI-FOULING (Heavy Duty or Pastel), EPIGLASS HI-SPEED COPPER ANTI-FOULING, or EPIGLASS PACIFIC ANTI-FOULING, EPIGLASS BOOT-TOPPING or EPIGLASS REACTION LACQUER.

| | |
|---|---|
| Coverage: | 70-75 sq. ft./pint/coat |
| Dust Free Time: | 2 hours |
| Recoating: | 8-24 hours depending on ambient temperatures |
| Application: | Brush, roller or spray |
| Thinning: | Brush application may be eased slightly in hot weather by up to 5% MARINECOAT RETARDER THINNERS. Add up to 10% EPIGLASS SPRAYING THINNERS or EPIGLASS UNIVERSAL THINNERS for Spray application. |
| Clean up: | Mineral Turps or EPIGLASS Cleaning Fluid |
| Colours: | Available in 22 Sparkling Colours plus Surf White, Silhouette Black, Genoa White and Metallic Gold.<br>Use Free Chalking Genoa White for the older type of planked hull. |

## MARINECOAT NON-SKID DECK FINISH

Ready for use on Timber, Fibreglass, Canvas or Steel Decks, this new Polyurethane Plastic Non-Skid Finish gives sure footed, hard wearing protection to all types of deck, and resists sun and salt water to a remarkable degree.

HINTS: Very attractive effects are obtained by masking off areas of deck such as a few inches in from the rail and coamings, etc. After the walkways have been treated with EPIGLASS MARINE NON-SKID DECK FINISH, the masking tape should be removed and these areas painted in a matching or contrasting shade of EPIGLASS MARINECOAT GLOSS FINISH so as to outline the non-skid portions.

| | |
|---|---|
| Coverage: | 65-70 sq ft./pint/coat |
| Application: | By Brush or Roller |
| No. of coats: | 2 |
| Drying Time: | 4 hours |
| Recoating: | Overnight |
| Thinning: | Not normally necessary but ease with MARINECOAT RETARDER THINNERS in hot weather. |
| Clean up: | Mineral Turps |

# Marine Varnishes and Allied Products

The range of EPIGLASS MARINE Varnishes offered by Consolidated Chemicals Ltd is a full one. Each product has been formulated to fulfil a definite purpose. The final result is a series of clear finishes to cater for every Marine contingency. Ancillary products include EPIGLASS SUNSCREEN, EPIGLASS STAIN ADDITIVE and EPIGLASS TIMBERTONE GRAINFILLER SEALER TONER.

## Epivar Marine Spar Varnish (2-pot Polyurethane)

It is the toughest, most reliable, highest quality varnish available, being elastic, waterproof and sunproof (with built-in sunscreen). EPIVAR is the best buy for masts, spars, decks, coamings and interior varnish work. The warm grain of beautiful timber is enhanced and protected by EPIVAR to a degree not previously possible. Water staining, suncracking, dry rot and general deterioration of exterior and interior timber is prevented by means of a tough long-wearing plastic film. EPIVAR, fully cured, is quite literally like glass!

EPIVAR is the ideal varnish for the production of a hard, polished racing surface on small Fin Keelers and Centreboard Yachts. It has no equal for cabin table tops, etc. but for the exterior bright work of large yachts and launches MARINECOAT POLYURETHANE SPAR VARNISH is recommended.

DIRECTIONS:

Mix two parts by volume EPIVAR to one part by volume EPIVAR Hardener. Measure accurately, mix thoroughly. Allow to stand 20 minutes before use.

| | |
|---|---|
| Coverage: | 55-65 sq. ft./pint/coat of mixed material |
| Sealing: | Thin first coat EPIVAR up to 20% with EPIGLASS UNIVERSAL THINNERS for best results. If EPIVAR is being used to seal timber prior to filling with EPIFILL, thin with 50% EPIGLASS UNIVERSAL THINNERS. |
| No. of Coats: | Minimum of three for interior<br>Minimum of five for exterior |
| Dust Free Time: | 10 minutes at 70°F (20°C) |
| Hard Drying Time: | Four hours at 70°F (20°C) |
| Temperature: | Preferably above 60°F (15°C) for application |
| Thinners: | EPIGLASS UNIVERSAL THINNERS or EPIGLASS SPRAYING THINNERS |
| Clean up: | EPIGLASS UNIVERSAL THINNERS or EPIGLASS CLEANING FLUID |
| Recoating: | Sound old EPIVAR films should be well flatted, mopped over very thoroughly with EPIGLASS UNIVERSAL THINNERS and recoated. A minimum of two new coats should be applied. |

*Sunbursts close-quarter racing during the Auckland Anniversary Regatta.*

## Epiglass Marinecoat Polyurethane Spar Varnish

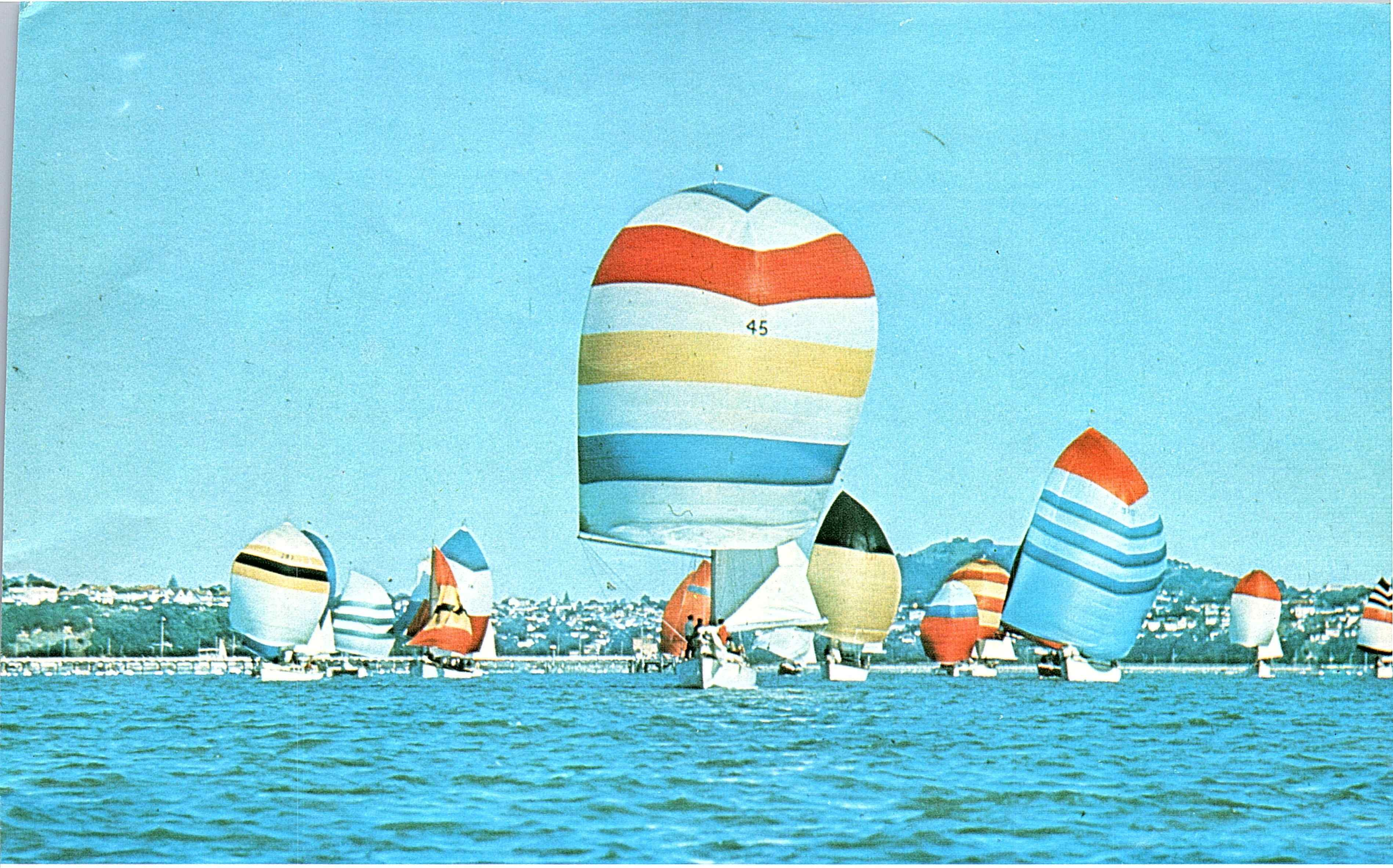
This is an air drying type of Polyurethane which requires no mixing or hardener addition and dries rapidly to an extremely durable, flexible and hard wearing finish that withstands extreme marine exposures. A very durable exterior varnish, it has been formulated especially for long lasting marine exposure on new work or over sound old varnish systems providing thorough and careful sanding has been carried out. For interiors it gives hard wearing, decorative, elastic protection to companionways, steps, galley trim, tables, lockers, etc. In fact, it is a quality varnish that is quick drying, easy to apply and high in durability. MARINECOAT POLYURETHANE SPAR VARNISH is the ideal product for all bright work on larger yachts and launches. Excellent durability is assured and recoating is simple. If an adequate film thickness has been attained in the first place, it is only necessary to sand lightly after six months, wipe down and apply one further generous coat. This procedure can be followed for several years without loss of integrity of the film even under conditions of extreme exposure.

| | |
|---|---|
| Coverage: | 55-65 sq. ft./pint/coat |
| Sealing: | Apply the first coat of MARINECOAT SPAR VARNISH on bare wood, thinned at least 10%. This is the soundest practice for both interior and exterior. If MARINECOAT SPAR VARNISH is to be used as a Sealer prior to filling with EPIFILL thin with 50% of Universal Thinners. |
| Application: | Brush or Spray |
| Dust Free: | 30 minutes at 70°F (20°C) |
| Drying Time: | 6-8 hours at 70°F (20°C) |
| No. of Coats: | Minimum of 3 interior<br>Minimum of 5 exterior |
| Thinning: | Not normally required, but brushing may be eased with MARINECOAT RETARDER THINNERS in hot weather. For spraying, add up to 5% EPIGLASS SPRAYING THINNERS or Mineral Turps. |
| Clean up: | Mineral Turps or EPIGLASS CLEANING FLUID |

*The start of a Third Division Keeler Race.*

TOUCHING UP

For that touch-up job use MARINECOAT SPAR VARNISH AEROSOL. It is durable, fast drying, and no brush is necessary. Simply smooth up the damaged area of varnish-work with fine sandpaper, wipe clean and spray lightly. Allow to dry, and give a further sanding followed by a second spray coat of varnish. Recommended as a stand-by applicator for all boat owners. An excellent corrosion prevention treatment for outboard motor nuts and bolts, electrical systems, etc.



*A fleet of First Division Keelers running down Auckland's Waitemata Harbour.*

## Epiglass Sunscreen

Added to your varnish will double the life of bright work. Add one vial of SUNSCREEN to one pint of any EPIGLASS Marine Varnish, stir for a few minutes until dissolved. (See section on Brightwork finishing on pages 17 and 18.)

## Epiglass Stain Additive

Is the answer if you want to change the colour of the timber, to prevent fading of natural colour or to hide water staining on older craft. Up to 5% EPIGLASS STAIN ADDITIVE can be added to the first coat of any of the EPIGLASS Varnish range. Application to bare wood is essential, therefore all traces of old varnishes must be removed beforehand. An alternative method of use is to apply direct with a soft pad, either straight from the bottle or diluted with up to five times its volume of Methylated Spirits or EPIGLASS UNIVERSAL THINNERS. Allow to dry for at least two hours and proceed with varnishing as usual.

Available in 6 light fast colours – Cedar, Golden Teak, Teak Brown, Red, Rosewood, Dark Mahogany.

## Epiglass Polyvar

Is the best finish for cork tiles on your cabin floor. Never ever polish again. For interior use only. Not less than 3 coats.

## Epiglass Timbertone Grain Filler/Sealer/Toner

Is the ideal product for filling, sealing and toning the grain of timber in one application before varnishing. Apply with a soft rag, rubbing well into the surface first across and then with the grain. Allow to dry overnight. Suitable only for use on bare timber. Sand lightly and finish with any of the previously listed EPIGLASS Marine Varnishes, Timbertone Teakwood Oil, or with Timbertone Clear Plastic (Gloss or Satin).

Available in Neutral Clear and Eleven beautiful Timber Colours – Blondwood, Ash, Golden Maple, Rimu, Teak, Light Mahogany, Rich Mahogany, Rosewood, Oak, Walnut, and Dark Mahogany.

## Epiglass PBS Self Sealing Plastic Finish

Is the perfect finish for all Particle Board or similar materials in your cabin. No preparatory treatment, except sanding, is required. Full instructions are provided on the cans.

## Indothane

Is a quick drying Urethane Varnish made under licence in New Zealand by Consolidated Chemicals Ltd for DAP Inc. Dayton, Ohio. It is available in gloss and satin finish. The Gloss is an excellent exterior finish for treatment of bright work. The Satin is not recommended for maximum exterior exposure, but gives a lovely soft finish on all interior woodwork.

| | |
|---|---|
| Coverage: | 55-65 sq. ft./pint/coat |
| Application: | Brush or Spray |
| Dust Free Time: | 15-20 minutes at 70°F (20°C) |
| Hard Drying Time: | 4-6 hours at 70°F (20°C) |
| No. of Coats: | Minimum of 3 inside or 5 outside |
| Clean up: | Mineral Turps |

# Antifoulings

Any boat, large or small, that is to be moored, or that is immersed in salt or fresh water for periods of longer than one week, requires antifouling treatment.

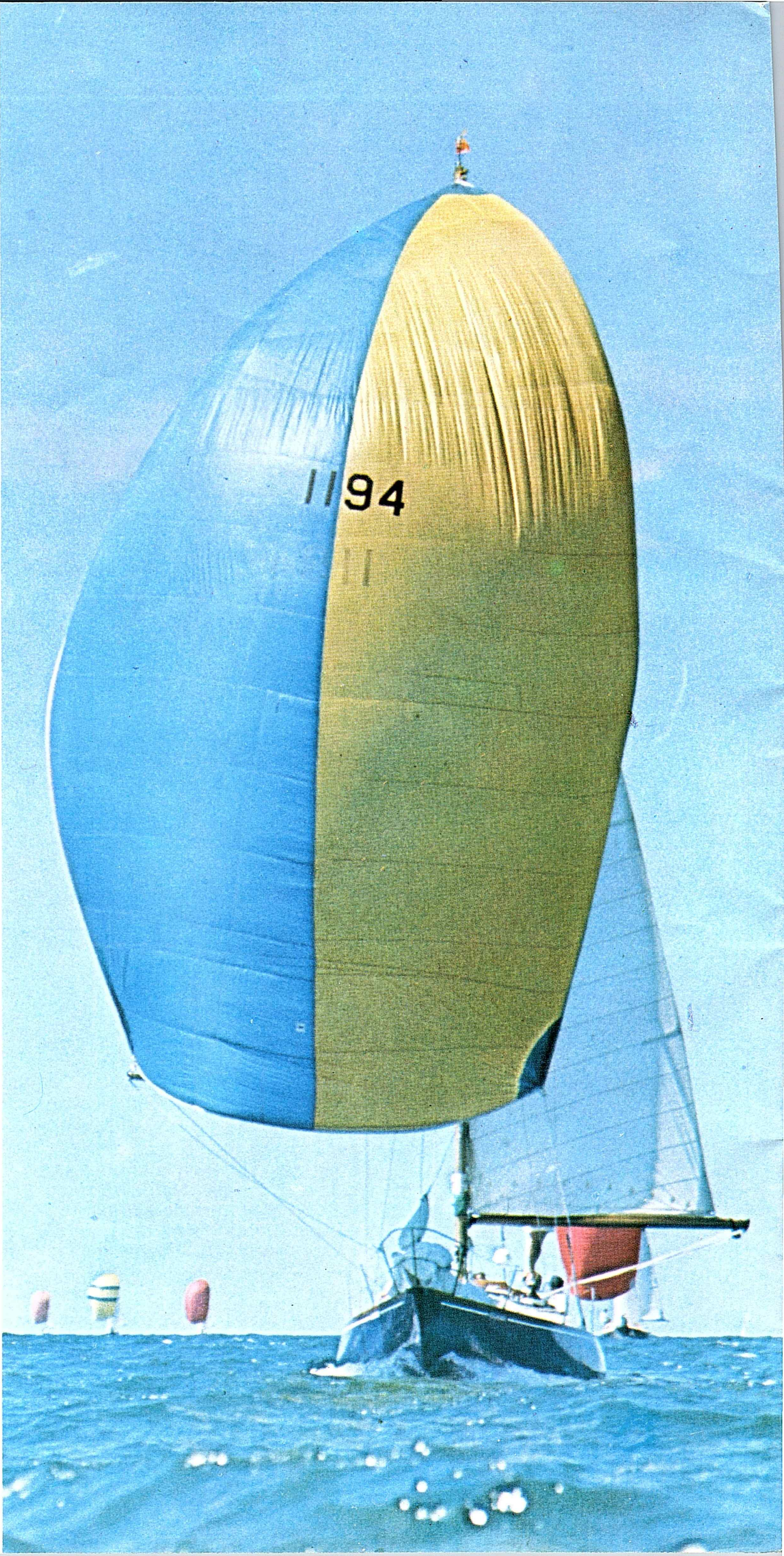
Consolidated Chemicals Ltd manufacture a wide range of antifouling paints to suit every purpose. These preparations fall into two categories – Contact Leaching, and Soluble Matrix.

The Contact Leaching type contains a high concentration of copper or other toxic compounds in a hard, insoluble binder, is extremely durable and withstands repeated scrubbing. It is represented in the EPIGLASS range by:
EPIGLASS HEAVY DUTY VINYL – Racing Red, Blue & Green
EPIGLASS LIGHT DUTY VINYL – Pastel (8 colours)
EPIGLASS HI-SPEED COPPER

The Soluble Matrix type is less costly, and works by washing away at the surface at a precisely controlled rate. EPIGLASS PACIFIC ANTIFOULING comes into this category. The presence of deposits of salt on old Antifouling will lead to peeling of subsequently applied coats.

When a boat is up for repainting below the waterline, the surface must be well washed down with fresh water and allowed to dry before commencing operations. It is not sufficient merely to sand down dry and apply further Antifouling to the salt laden surface.

Details of each of the above products and also on EPIGLASS UNDERWATER PRIMER UNDERCOAT are given opposite.



*ESCAPADE, leading New Zealand One Ton Cup Yacht, painted above the waterline with Epiglass Reaction Lacquer Escapade Blue, and below the waterline with Epiglass Rainbow II type Antifouling.*

# Epiglass Underwater Primer Undercoat

Is designed especially for the preparation of **new, unsheathed hulls** before the application of antifouling and is also recommended in cases where an old hull, below the waterline, has been stripped back to bare timber.

EPIGLASS UNDERWATER PRIMER UNDERCOAT is not intended for application to hulls which have been sheathed with EPIGLASS Resins and Dynel or Glass Cloth. It is not a Weave Filler.

No matter which grade of EPIGLASS ANTIFOULING is used, the antifouling should be applied straight onto the well sanded Glass or Dynel skin, after Weave filling has been completed according to the instructions given in the Sheathing Section.

| | |
|---|---|
| Coverage: | 65-70 sq. ft./pint |
| Number of coats: | Generally one is sufficient |
| Drying Time: | 3-4 hours |
| Recoating: | Overnight |
| Application: | Brush, roller or spray |
| Thinning: | Up to 10% EPIGLASS UNIVERSAL or SPRAYING THINNERS, or Mineral Turps if desired |
| Hardening Time: | Allow to harden for at least 24 hours or up to 3 days, and wet sand with 120 paper or finer before applying your selected EPIGLASS Antifouling |

# Epiglass Heavy Duty Vinyl Antifouling

Racing Red, Racing Blue and Racing Green

EPIGLASS HEAVY DUTY VINYL ANTIFOULING is a hard Contact Leaching type antifouling with a long, effective life. It contains a high percentage of mixed toxins – Cuprous Oxide, plus Organic and Organo-metallic Compounds. This carefully balanced blend ensures that it is lethal to the widest possible variety of marine organisms. The Vinyl Resin based medium has been devised to allow slow leaching of the poison to take place, whilst maintaining its own integrity as a hard, insoluble film. The result is an antifouling composition without equal for effectiveness, and yet one that will withstand hard scrubbing.

EPIGLASS HEAVY DUTY VINYL ANTIFOULING should not be used on steel or aluminium hulls unless they have been adequately protected against electrolytic corrosion.

Application of at least four coats of EPIGLASS NEOSEAL or of at least two coats of EPIGLASS EPITAR will serve this purpose.

The rich colour of Racing Blue and Racing Green is only developed after 3-4 weeks immersion in salt water.

| | |
|---|---|
| Coverage: | 35-40 sq. ft./pint/coat |
| Number of coats: | At least two |
| Drying Time: | 2-4 hours if spraying, but, if not, leave for 24 hours between coats |
| Launching Time: | Not less than one hour and up to four weeks after painting. For a fast racing bottom which will withstand repeated scrubbing or polishing with 600 paper, leave the boat on the Hard for three to four weeks. |
| Application: | Brush, roller or spray |
| Thinning: | Not normally required, but for spraying add up to 10% EPIGLASS SPRAYING THINNERS |
| Clean up: | Mineral Turps or EPIGLASS CLEANING FLUID |

# Epiglass Light Duty Vinyl Pastel

Shark White, Dolphin Blue, Sea Green, Rescue Yellow, Marlin Blue, Navigator Red, Mindanao Black, Sunset Gold.

Here is a new, non copper Antifouling available in a range of 8 beautiful shades especially designed for ultra smart boats. The film is hard and the nature is that of a Contact Leaching type but it does not give quite such enduring protection against fouling as does the Heavy Duty Grade. Because it contains no copper, electrolytic corrosion is no problem.

Specification as for HEAVY DUTY ANTIFOULING (see above) EPIGLASS LIGHT DUTY PASTEL ANTIFOULING is the ideal material for application to the bottoms of Trailer Boats that are to be subjected to intermittent immersion for moderately long periods. It does not darken or fade if left exposed to the weather for periods of several months. Twice a season it will be found necessary to wet sand and apply at least one coat of fresh material.

# Epiglass Pacific Antifouling

EPIGLASS PACIFIC ANTIFOULING is a soluble matrix type, and is the most effective general purpose antifouling on the market.

Epiglass Pacific Antifouling is designed to give good service on all types of cruising craft. The high degree of toxicity and the controlled rate of solubility of the film prevent all forms of larvae and weeds from securing a hold. This makes it eminently suitable for use on both wood and steel hulled commercial fishing boats where its low cost and easy recoatability are a great asset.

| | |
|---|---|
| Coverage: | 40-45 sq. ft./pint/coat |
| Number of coats: | At least two |
| Drying Time: | 4-6 hours if spraying, but if not leave 12-24 hours between coats |
| Launching Time: | Within 24 hours or between tides |
| Application: | Brush, roller or spray |
| Thinning: | Do not thin except for spraying, when 10% EPIGLASS SPRAYING THINNERS may be added. |
| Clean up: | EPIGLASS CLEANING FLUID or Mineral Turps |

# Epiglass Antifouling Boot Topping

Available in half pint tins in the same attractive range as EPIGLASS PASTEL ANTIFOULING. Will not discolour in service and will give protection against weed growth or blistering along the wind and waterline.

| | |
|---|---|
| Coverage: | 15-20 sq. ft./half pint/coat equivalent to a Boot-top 3" wide on an 18ft hull on two coat work |
| Drying Time: | 2-4 hours |
| Application: | Brush or Spray |
| Thinning | Do not thin except for spraying, when 10% EPIGLASS SPRAYING THINNERS may be added |
| Clean up: | EPIGLASS CLEANING FLUID or Mineral Turps |

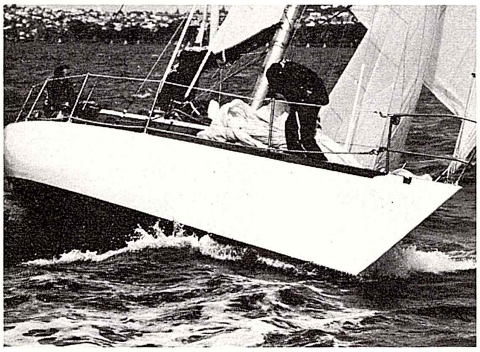
# Epiglass Hi-Speed Copper Antifouling

This antifouling is based on the same hard, long lasting Vinyl Resin medium as EPIGLASS HEAVY DUTY VINYL ANTIFOULING Racing Red, but contains a specially selected blend of lamellar pigments, Long Chain Polymers and multi-toxins designed to produce a film which, when burnished, is guaranteed to lower skin friction and turbulence upon the hull and minimise marine growth.

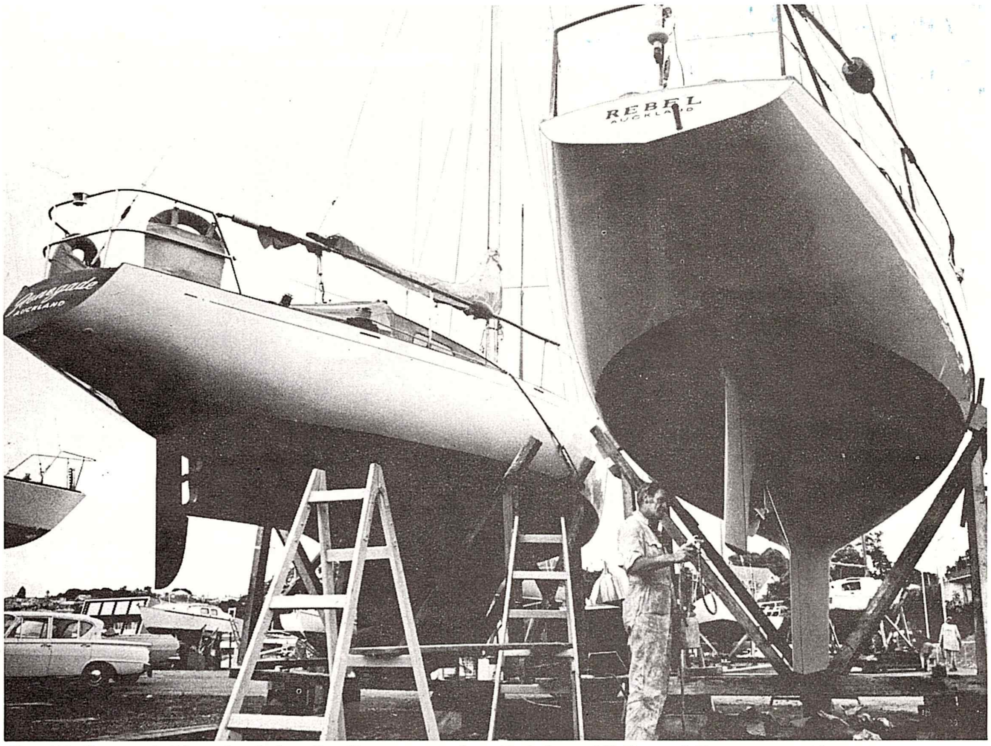
The particles of lamaller pigment, after fine sanding and burnishing, lie down and overlap like fish scales. This results in an increase of about 10-15% in "slip". Greater speeds can be attained with reduced sail area, and a cut in fuel consumption can be expected.

| | |
|---|---|
| Coverage: | 45-50 sq. ft./pint/coat |
| Number of coats: | Two* |
| Touch Dry: | 1-2 hours or less |
| Recoating: | Overnight, but when spraying use wet-on-wet technique |
| Launching Time: | 1 hour or up to 4 weeks |
| Application: | Brush, roller or spray. Best results are obtained by spraying |
| Thinning: | Not normally required for brush or roller, but on large areas in hot weather a slight easing with Mineral Turps is sometimes advisable |
| Cleaning: | Clean up with Mineral Turps |

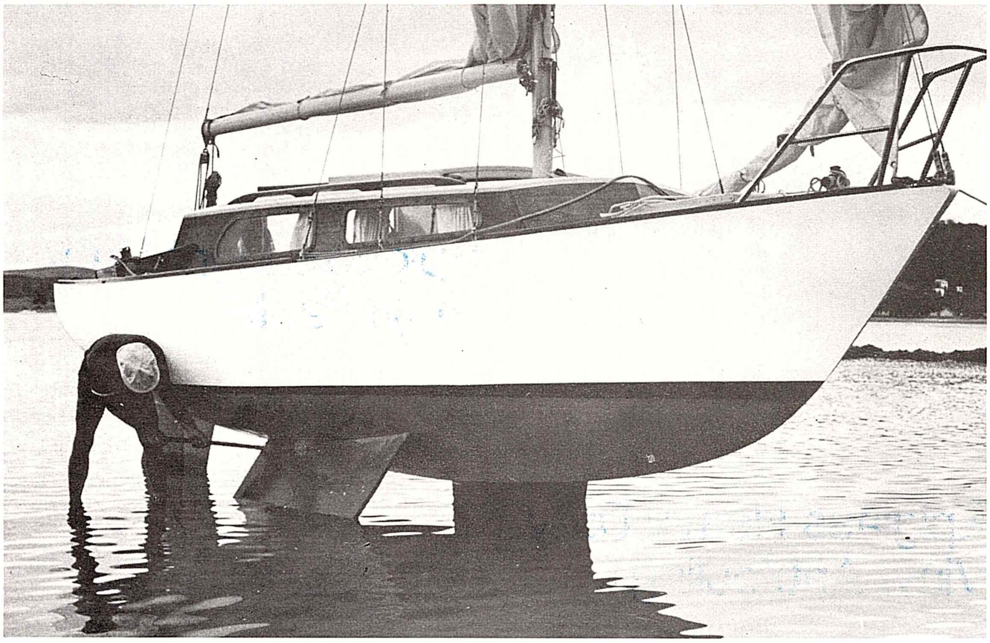
* As soon as the second coat has dried, it should be wet sanded smooth with 400 or 600 paper, flushed clean with water and burnished with a lambswool mop. Under good conditions the interval could be as little as 4 hours, but should not be prolonged further than 24 hours. Delay means harder work and a poorer result. When cleaning between races, wash down and polish with a chamois, but do not re-sand.



*RAINBOW II – 1969 One Ton Cup winner, finished above and below the waterline with Epiglass marine products.*



*Jim Wallace of Chemical Applications spraying Epiglass Hi-Speed Copper on the yacht REBEL.*



*The antifouling on this twin bilge keeler being scrubbed down between tides.*

*CARLA – finished throughout the interior and exterior with Epiglass marine products.*

# Epiglass Reaction Lacquer System

## Epiglass 2-Pot Polyurethane Reaction Lacquer

**Premium protective system for Marine and Industrial purposes and for maximum trouble-free life under Marine conditions.**

* It is unaffected by intermittent or permanent immersion in fresh, salt or sulphurous water.

* Resistant to sun and all other hazards associated with exterior exposure under the most arduous conditions.

* Impervious to petrol, oil and diesel fuel.

* Tough, hard, firmly adherent film which withstands abrasion and yet is sufficiently elastic to be unaffected by the working of a racing hull.

* High solids content results in good build and sparkling gloss.

**The ideal product for Centreboard Yachts, Trailer Boats, Fin Keelers, Fibreglass Boats, Alloy Outboard Motors, Stern Drives, Aluminium Dinghies, Aluminium Yachts, Aluminium Masts and Spars, Industrial Machinery, Top Dressing or Passenger Aircraft.**

DIRECTIONS:

EPIGLASS REACTION LACQUER PRIMER, Undercoat and Finish are mixed at 2:1 by volume with their appropriate Hardeners and should be left to stand for 20 minutes before use. This gives better blending of the mix and eliminates air bubbles. Use a good quality brush and flow on quickly and smoothly. EPIGLASS POLYURETHANE REACTION LACQUER dries quickly and it is necessary to work fast and to avoid going back over the finished coating. Second coats should be applied after 6-12 hours, and before expiration of 48 hours, to ensure maximum inter-coat adhesion. If, due to unavoidable circumstances, this maximum period has been exceeded, the surface of the first coat must be sanded lightly and wiped over with a soft rag saturated with EPIGLASS UNIVERSAL THINNERS before recoating.

RECOATING

When recoating after a year or two, sand down wet with 180/320 grit paper. Wash down with EPIGLASS UNIVERSAL THINNERS to remove surface impurities and slightly soften the existing film and thus provide better adhesion for the new coat.

EPIGLASS REACTION LACQUER may be brush applied but, on larger areas, a better finish is obtained by spraying.

**For Spray application** use a wet-on-wet technique. This consists of a well thinned out "Tack-coat", followed 15-20 minutes later by a full "double-header". Final flow and gloss are improved by a "mist" (coat after a further 20 minutes) of equal parts of Reaction Lacquer and Hardener mixture and EPIGLASS UNIVERSAL THINNERS.

Use of excess Hardener will give a hard film difficult to recoat, while a slight deficiency will result in one that is soft and easily marred. At the same time it should be noted that an over or under-cured film will have inferior weathering properties. Any unused Resin or Hardener left in the cans must be well sealed and kept in a dry place. Allow the final coat to cure for 2-3 days before subjecting to hard use. The surface may then be cut and polished with EPIGLASS SHOWBOAT POLISH.

NOTE

Water in any form reacts chemically with any of the Reaction Lacquer Hardeners and destroys them with the formation of gas bubbles. When spraying, therefore, it is essential to install an efficient water trap in the air line. For the same reason brushes and all other equipment must be clean and dry. The reaction between the Hardener chemicals and water will result in an undercured film having poor performance and a poor appearance. Equipment should be washed in EPIGLASS CLEANING FLUID but must then be dried carefully or given a final rinse in EPIGLASS UNIVERSAL THINNERS. EPIGLASS CLEANING FLUID reacts with the Polyurethane Hardener and destroys the active chemical.

## Epiglass Reaction Lacquer Primer

| | |
|---|---|
| Mixing: | 2 parts REACTION LACQUER PRIMER with 1 part REACTION LACQUER PRIMER HARDENER by volume |
| No. of coats: | One |
| Drying Time: | Touch dry 30 minutes<br>Hard dry 12 hours |
| Pot Life: | 4-6 hours |
| Coverage: | 65-70 sq. ft. per pint of mixed material |
| Thinning: | EPIGLASS UNIVERSAL THINNERS or EPIGLASS SPRAYING THINNERS |
| Cleaning: | EPIGLASS CLEANING FLUID |
| Application: | Spray or brush |
| Colour: | Silver |

## Epiglass Reaction Lacquer Undercoat

| | |
|---|---|
| Mixing: | 2 parts EPIGLASS REACTION LACQUER UNDERCOAT SURFACER with 1 part REACTION LACQUER UNDERCOAT HARDENER by volume |
| No. of coats: | Normally 2 or more if required |
| Drying Time: | Touch dry 1-2 hours |
| For wet sanding: | 6-8 hours |
| Pot Life: | 4-6 hours |
| Coverage: | 65-70 sq. ft. per pint of mixed material per coat |
| Thinning: | 10% EPIGLASS UNIVERSAL THINNERS or EPIGLASS SPRAYING THINNERS |
| Cleaning: | EPIGLASS CLEANING FLUID |
| Colour: | White |

## Epiglass Polyurethane Reaction Lacquer Finish

| | |
|---|---|
| Mixing: | 2 parts EPIGLASS REACTION LACQUER with 1 part REACTION LACQUER HARDENER by volume |
| No of coats: | Normally 2, or more if required. |
| Drying Time: | Touch dry 1 hour |
| For wet sanding: | 6-12 hours |
| Pot Life: | 4-6 hours |
| Coverage: | 70-75 sq. ft. per pint per coat of mixed material |
| Thinning: | EPIGLASS UNIVERSAL THINNERS or EPIGLASS SPRAYING THINNERS |
| Cleaning: | EPIGLASS CLEANING FLUID |
| Colour: | 16 Colours plus White |

NOTE: INDUSTRIAL USES OF EPIGLASS REACTION LACQUER.

EPIGLASS REACTION LACQUER is non-toxic and non-irritant and may be used for protection of food processing machinery, aluminium or alloy aircraft etc. The smooth, impervious surface combined with the high chemical and corrosion resistance of REACTION LACQUER make it ideal for any areas requiring protection from water, petrol, oil, diesel fuel, fruit acids and most solvents.

For full information and specifications consult our Technical Service Laboratory.

## Epiglass Safe Deck

EPIGLASS SAFE DECK is a granular substance which is intended for use on decks, cockpit floors, cabin tops, etc., where a safe sure surface is essential at all times, not only in rough weather but also on a golden summer's day with a fine sailing breeze. EPIGLASS SAFE DECK is sprinkled in a thick layer onto a wet coat of EPIGLASS 90 or 90 RAPID RESIN (mixed 2:1 by volume with its appropriate hardener). After allowing sufficient time for the initial hardening, the excess is swept off and a further coat of EPIGLASS 90 or 90 RAPID RESIN plus hardener is applied. The resultant tough, weatherproof film ensures a firm grip for bare feet even when shipping it green! The surface is not sharp or abrasive but, on the other hand ,is slightly resilient. It wears and wears and never lets you down. EPIGLASS SAFE DECK can be applied to the whole area or, by the use of masking tape, may be confined to walk ways and other areas of maximum use. Before proceeding further it is recommended that the whole area be scrubbed down with a mixture of fresh water and SEACLEAN so as to remove all traces of glycol film that may be present on the cured resin surface in cold weather. Failure to remove this glycol film can result in poor adhesion and drying and discolouration of subsequent finishing coats.

MARINECOAT PLASTIC GLOSS FINISH or EPIGLASS REACTION LACQUER in the colour of your choice may be used as a finish coat.

EPIGLASS SAFE DECK is available in 8oz. and 1lb. plastic bags. Contents of each bag is sufficient for 10 and 20 sq.ft. respectively.

## Epiglass PolyColour

Touch up paintwork with EPIGLASS POLYCOLOUR. This aerosol enamel may be used for all touch-up jobs on board. Application is simple, drying is rapid and recoating is no problem when you come to do a full repaint. Available in 21 colours including Gold, Silver, Clear and Undercoat in 15 oz. aerosol cans and in a restricted range of the most popular colours in 5 oz. cans.

## Epiglass Trailer Coat

Protect your trailer from corrosion by sea water with EPIGLASS TRAILER COAT. Ideally, you should have the trailer sand blasted, and apply one coat of EPIGLASS ETCH PRIMER (mixed 1:1 by volume with its Activator) before applying two coats of EPIGLASS TRAILER COAT. If this is not possible, clean the trailer with a scraper and wire brush and apply two coats of EPIGLASS TRAILER COAT. Rust spots that may appear from time to time through stone chipping should be scraped down and touched up with further EPIGLASS TRAILER COAT.

If desired the appearance of the trailer may be further enhanced by the application of one or two coats of MARINECOAT PLASTIC GLOSS FINISH in selected colour over a well dried film of EPIGLASS TRAILER COAT. It is always a good policy to hose down your trailer after launching to remove salt water.

## Epiglass Marinecoat Engine Enamel

The ideal material for freshening up the appearance of your engines, whether Automotive or Marine. Clean down thoroughly with EPIGLASS ENGINE CLEANER or SEACLEAN. Rinse, wipe dry and apply one full brush coat of EPIGLASS ENGINE ENAMEL. EPIGLASS ENGINE ENAMEL is available in Black, Bright Red, Blue, Green, Silver, and Grey, and will withstand temperatures up to 250°F for an indefinitely long period without loss of gloss or colour.

## Epiglass Penetrating Oil

EPIGLASS PENETRATING OIL works wonders on rusted and frozen bolts and fittings. Just apply and allow to soak in for a few minutes. EPIGLASS PENETRATING OIL is available in 2 oz. plastic bottle or 5 oz. aerosol.

## Seaclean

The ideal general purpose cleaner for almost any washing job with either fresh or salt water. It removes oil, grease and dirt, and helps to conserve fresh water supplies at sea.

CLEANING THE BILGES

Pour in a pint or so of SEACLEAN leave 2-3 days and pump out. It takes out grease, dirt and stale smells.

## Epiglass Hand Cleaner

EPIGLASS HAND CLEANER will take off grease and dirt without water.

## Anti-Rust Treatment

EPIGLASS RUST KILLER effectively kills and removes rust on locally rusted areas by cancelling out the chemical rusting action. It is not a rust preventer by itself, but it stops rusting completely, so that he affected area can be painted for protection.

Brush the RUST KILLER on the rusted area, leave it to react for five minutes, rinse off with clean fresh water and let it dry before painting.

RUST KILLER can also be used on copper, aluminium and most other metals to remove all traces of oxidation, corrosion and grease before painting.

RUST BIND OIL

This is a specialised treatment for inside steel hulls, before and during fitting out. It binds powdering rust down to a firm coating and prevents further rusting. By the time fitting out is completed, the RUST BIND OIL will have dried to a hard film, and can then be painted with MARINECOAT ZINC CHROMATE PRIMER.

## Epiglass Ready-to-use Engine Cleaner

For cleaning grease and oil off the engine and other metal use EPIGLASS READY-TO-USE ENGINE CLEANER. It takes off even heavy grease and caked dirt leaving the surface clean. Just brush it on, leave to soak, then rinse off with water. Protect the distributor with a plastic bag.

## Fabric Waterproofing

To restore waterproofing to sails, waterproof clothing and life jackets, use EPIGLASS WATERPROOFING SILICONE, available in an aerosol pack. It protects as well as waterproofs.

## Degreasing Metal

Use Ready-to-Use ENGINE CLEANER, EPIGLASS RUST KILLER, EPIGLASS SEACLEAN or EPIGLASS CLEANING FLUID.

## Thinning

You will need to use a thinner in many paint jobs with MARINECOAT and other EPIGLASS products. It helps you to get the right spreading rate with the paint you use if brushing, and the right flow if spraying.

When using EPIGLASS RE-ACTION LACQUER or EPIVAR, etc., use EPIGLASS UNIVERSAL THINNERS, which acts fast and ensures a smooth gloss film free of brush marks.

For spraygun work, use EPIGLASS SPRAYING THINNERS, which is specially prepared to give the good smooth texture you need for really successful spraying.

When working in very hot weather, with MARINECOAT products, you will find it better to use MARINECOAT RETARDER THINNERS instead of Universal Thinners. It has a lower rate of evaporation in the heat, and makes brushing easier. Do not use Retarder Thinner for spray gun work.

When you are thinning paint, be cautious about how much you put in the paint pot. It is best to add it little by little, testing for consisency each time. After all, it is very easy to pour in, but impossible to get out again! Be patient!

## Removing Paint and Varnish

You can save yourself a lot of time and effort in preparing for repainting by using EPIGLASS HEAVY DUTY PAINT & VARNISH REMOVER. It is amazingly fast and efficient, and it does not burn the wood underneath. It strips off both paint and varnish cleanly to give you a fast start on new painting. It even works on hard two-pot products. Simply apply one heavy coat and allow to soak for a few minutes. Scrape off. Remove all remaining material by scrubbing thoroughly with EPIGLASS SEACLEAN mixed with fresh water.

Pay particular attention to joints especially under mouldings and to corners. Unless these are cleaned out thoroughly, the new coating will fail in these areas after a few weeks. All old stoppers or putty should be dug out and replaced.

WARNING: Do not use this product on fibreglass or Dynel surfaces. Do not smoke whilst using EPIGLASS HEAVY DUTY PAINT REMOVER. Though it is non-flammable, the vapours, if inhaled through red hot tobacco, form a highly toxic compound.

## Restoring New Boat Finish

EPIGLASS SHOWBOAT MARINE POLISH. Suitable for fibreglassed, painted and varnished hulls. You can brighten up a faded looking hull quite easily with EPIGLASS SHOWBOAT MARINE POLISH. Simply wash down the area to be polished, removing all salt and allow to dry. Taking a small section at a time, appy EPIGLASS SHOWBOAT with a clean damp cloth. Before the polish has dried completely, polish off with a soft, clean, dry cloth to give that show-room lustre.

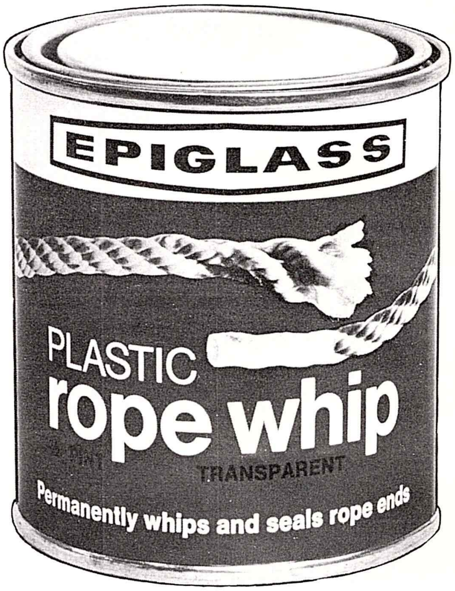
## Thinners

EPIGLASS UNIVERSAL THINNERS. A specially formulated blend of solvents for thinning all Epiglass surface coatings except ETCH PRIMER and EPIPRIME.

EPIGLASS SPRAYING THINNERS. Use this fast evaporating solvent blend when applying any Epiglass surface coatings (except ETCH PRIMER and EPIPRIME) by spray.

**Note:** Use Methylated Spirits for ETCH PRIMER and water for EPIPRIME.

In hot weather, up to 5% added to Marinecoat products will ease brushing by improving the "wet edge" properties. Do not use under cold or badly ventilated conditions. Do not use with EPIGLASS RE-ACTION LACQUER or EPOXY RESINS.



## Epiglass Plastic Rope Whip

EPIGLASS PLASTIC ROPE WHIP simplifies whipping and splicing and is particularly recommended for Terylene and other synthetic fibres. Do not attempt to use on wet or greasy cord.

TO WHIP THE END OF A ROPE:

Trim the end and dip about 1-1½ inches into the tin of Rope Whip. Allow the coating to become surface dry and dip again. Do not put the rope into service for 18-24 hours.

TO REINFORCE A SPLICE:

Dip once only and allow to dry overnight before using.

TO STOP FABRIC FRAYING AND REDUCE WEAR ON RIGGING:

Dip once only and allow to dry.

EPIGLASS PLASTIC ROPE WHIP is available in Clear and Rescue Orange. The Clear is almost invisible when dry. Rescue Orange fluoresces at night and is ideal for identification after dark or for distance marking of rope.

EPIGLASS PLASTIC ROPE WHIP is permanently flexible and waterproof.

# Spraying Technique

Spray application, especially of such relatively quick setting products as EPIGLASS REACTION LACQUER, gives a better finish than roller or brush, particularly on large areas, but the time and labour involved in masking the surrounding portions are hardly justified on small jobs.

Vacuum cleaner spray guns and other ultra low pressure equipment are only suitable for use on very small areas such as "touch ups". So much thinning is necessary that very little film build is achieved.

All EPIGLASS surface coatings can be sprayed, providing the following facts are borne in mind.

**1.** Products containing Lead (e.g. RED LEAD PRIMER), Copper (e.g. HEAVY DUTY and PACIFIC Antifoulings) or other toxic substances (e.g. EVERDURE and PASTEL ANTIFOULINGS) are poisonous and a face mask must be worn.

**2.** Products containing Epoxy Resins can cause dermatitis and care should be taken to minimize skin contamination. A face mask should be worn.

**3.** When using two-pot materials care must be taken to wash the gun thoroughly with EPIGLASS CLEANING FLUID during the usable pot life of the mixture. Failure to do this can result in the complete loss of the gun. It is not sufficient merely to pour Thinners into the pot. The gun must be cleaned right out.

**4.** Ordinary Lacquer Thinners are not suitable for use with EPIGLASS products. For maximum speed of drying use EPIGLASS SPRAYING THINNERS. In hot weather or on very large surfaces, EPIGLASS UNIVERSAL THINNERS may be used so as to keep the film "open" longer.

**5.** The fog of finely divided paint or lacquer is very flammable so do not smoke whilst spraying.

**6.** For a first class finish, an efficient water separator and oil trap are necessary. These are absolutely essential when spraying two-pot Urethane materials (REACTION LACQUER and EPIVAR). The slightest trace of condensed water in the air line will react with and destroy the chemicals in the Hardener with the formation of gas bubbles. The result is a cratered, undercured film with decreased durability.

**7.** One of the great advantages of spray application is the ability to employ what is termed a "wet on wet" system. This is particularly applicable to chemical curing coatings such as EPIGLASS REACTION LACQUER. The technique is simple and consists of the following steps:

(a) Apply a well thinned "tack coat". Enough should be applied to give a wet coat all over but it should not be unduly heavy.

(b) About 10-20 minutes later, apply a heavy coat all over. Enough Thinners should be added to ensure that atomization is efficient but no more.

(c) As soon as this first heavy coating has been completed and whilst it is still wet, apply a further similar coat.

**NOTE:** When using MARINECOAT PLASTIC GLOSS, care should be taken not to apply excessively heavy coats as this can lead to runs, wrinkling and a soft, easily damaged film.

(d) As soon as the "double header" coat above has tacked off, apply a thin mist coat of equal parts paint (plus Hardener where applicable) and EPIGLASS SPRAYING THINNERS. This will materially improve the flow and final gloss.

(e) The film should not be subjected to heavy wear conditions until hardening is complete. The actual time interval will depend on weather and the particular product involved.

# Common Paint Faults

## Their Causes and Prevention

WRINKLING

If a paint film has wrinkled, it is an indication that too thick a film has been applied for the drying conditions prevailing at the time. The paint film dries on the surface whilst the under portions are still liquid. Subsequent slow shrinkage as the solvents evaporate causes the development of wrinkles. This fault is most likely to be met with under hot, humid conditions.

**Prevention:**

Do not apply excessively thick coatings, particularly in hot, humid weather.

RUNS OR SAGS

This fault is also brought about by excessively heavy application. Where the sags are located they have probably been caused by insufficient attention to even spreading of the paint. When spraying, runs and sags are usually caused by incorrect thinning or by holding the gun too close to the surface. The use of incorrect Thinners may also contribute. Each coat should be wet but of no more than medium thickness.

**Prevention:**

See under "Wrinkling". Make sure that the applied paint film is of even thickness. With a spray gun, use the lowest air pressure that will give good atomization, hold the gun at least 9 inches from the surface and pointing at right angles towards the sprayed area. Maintain a shop temperature of 65°F (minimum).

SLOW DRYING

Slow drying can be related to bad ventilation, surface contamination, excessively heavy coats or the use of the wrong material for the particular surface in question.

BAD VENTILATION

Bad ventilation which results in a build-up of solvent vapour and an absence of sufficient air invariably leads to slow drying.

SURFACE CONTAMINATION

Surface contamination usually consists of grease or wax, but heavily contaminated industrial atmospheres or marine conditions can result in a deposit of salts or acids which effectively prevent the new paint from drying in its normal time. During spray operations, oil contamination from the compressor can lead to the same trouble. When painting Totara or other difficult timbers, reference should be made to our Technical Service Department for a suitable specification.

EXCESSIVELY HEAVY COATS

Heavy coats will dry slower than normal ones and also lead to other problems. (See under "Wrinkling" and "Runs".) Two medium coats will not only harden quicker than one very heavy one, but will also give better results.

USE OF THE WRONG MATERIAL

In these days with a wide choice of painting materials, always make sure that the product you use is the right one for the job in hand. A ready mixed oil paint is too slow and soft for painting terrace furniture: use EPIGLASS MARINECOAT or EPIGLASS POLYCOLOUR, or even a High Gloss House Paint. On the other hand, a House Paint is too slow drying for re-painting a car.

**Prevention:**

Avoiding all the errors mentioned above will effectively prevent slow drying.

SINKING

A gloss finish, such as MARINECOAT, that has been applied to an undercoat which has not hardened sufficiently will frequently become dull and lifeless after a few days. Air drying materials harden by air oxidation from the outside surface of the film, inwards. Heavily pigmented undercoats are often sanded when only **apparently** dry and before oxidation is complete. The sanding exposes softer, only partially oxidised layers and, unless these are allowed to re-harden before applying gloss finishes, sinking will occur. In extreme cases, the freshly exposed surface can swell and rivel.

**Prevention:** Always allow heavy applications of undercoat to re-harden after sanding.

### ORANGE PEEL

Orange peel is usually met with only when spraying and is caused by insufficient atomization, too high a viscosity or by the gun being held too close to the surface. Too fast setting in hot weather can also lead to orange peel.

**Prevention:** See under "Runs or Sags" Add a proportion of a suitable Retarder Thinner when spraying in hot weather.

### POOR GLOSS

Poor gloss can be caused by incorrect use of Thinners, poor hold-out of the undercoat, excessively humid or cold conditions, over-spray, insufficient ventilation or painting over a contaminated surface. (See also under "Blooming".)

**Prevention:** Make certain that the surface is properly undercoated and that adequate time for drying has been allowed. Provide good ventilation, make certain that the surface is thoroughly cleaned before commencing operations. Do not apply Gloss paints late in the day (deposition of minute drops of dew upon a wet or partially dried film causes fine cratering which has the effect of lowering Gloss).

### WATER SPOTTING

Droplets of rain or dew upon a freshly dried film can act as lenses for the sun's rays and cause the formation of dull or coloured spots.

**Prevention:** Avoid painting under adverse weather conditions.

### FISH EYES OR CISSING

The term "fish eye" is applied to small areas upon the surface from which the paint film has shrunk away leaving a crater. They are most commonly caused by the presence of Silicone Wax on the old surface and very careful cleaning is essential if there is any danger of the presence of this type of contamination. When applying Latex paint, fish eyes invariably appear unless proper flatting and/or cleaning of the old surface is carried out.

**Prevention:** Clean down very thoroughly, particularly if there is any danger of Silicone polish.

### BLISTERING

Blistering may be caused by a very large number of factors, but most often occurs when moisture has been trapped between coats by painting over a dewy or otherwise damp undercoat. The heat of the sun evaporates the moisture and the resulting vapour cannot escape through the new film. As well as the danger of atmospheric water, condensed water in spray lines can cause blistering. Under certain circumstances, blisters can also occur due to trapped solvent.

**Prevention:** Make certain that the surface to be painted is sound and dry. When re-painting over an old and rather perished film, do not forget that water can be trapped several layers down in the system due to absorption and also that solvent from the new paint system can also be absorbed and trapped.

### BLOOMING OR BLUSHING

This whitening and dulling of the surface is usually caused by the use of excessively fast solvents and is most often met with under conditions of high humidity and low temperatures. The cooling of the surface as the solvents evaporate, causes deposition of dew which precipitates the Resins in the Paint or Lacquer. This fault is most common with such products as car lacquers, Two-Pot Polyurethanes, etc.

**Prevention:** Avoid using in cold, wet weather unless artificial heating can be installed. Use a proportion of a suitable Retarder Thinner.

### BUBBLING AND FROTHING

When applying paints with a roller, bubbles are often formed. As a rule these will break before the film sets, but if they do not they lead to ugly blemishes.

**Prevention:** After the paint has been applied in an even film, run the roller **very lightly** over it again or follow the roller immeditely by laying off with a brush. The latter method, though more time consuming, is by far the best.

### BRUSHING FAULTS (LAP MARKS, ETC.)

See also under "Runs or Sags".

Modern quick drying materials require a different application technique from the old slower setting types. Such materials as EPIGLASS REACTION LACQUER, EPIGLASS EPIVAR and EPIGLASS PBS are cases in point but, to a lesser extent, high gloss finishes such as EPIGLASS MARINECOAT, can lead the unwary into trouble.

**Prevention:** The prevention of lap marks or "dry edges" is a matter of applying a solid coat without delay and of not "playing around". Always start at one corner and paint an area of, say, two feet square. Always paint to a full edge and do not feather it off. Lay it off once only and proceed to the next area. When laying off the second and all subsequent areas, always brush from the new towards the old and never commence a brush stroke from the half-set earlier application. Above all, use as large a brush as possible and "go for your life". There is no reason to be alarmed by the above advice; it is not difficult to carry out and will certainly avoid an unsightly rough-looking job.

On T. & G. floors, when using EPIGLASS PBS or POLYVAR, paint in strips of not more than 2 or 3 boards and complete the full length of these before moving to the next strip. On Particle Board or Plywood, finish each sheet before moving on. Finally a word of warning – make sure that you do not paint yourself in!

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